I-81 VIADUCT PROJECT - PHASE 1, CONTRACT 1

PIN 3501.90, Contract D900054

CONTRACT DOCUMENTS
REQUEST FOR PROPOSALS

PART 5

SPECIAL PROVISIONS

Draft May 17, 2022

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SP-1. SPECIAL PROVISION TO SECTION 100 OF NYSDOT STANDARD SPECIFICATIONS CONSTRUCTION AND MATERIAL

Amend Section 100 of the New York State Department of Transportation Standard Specifications Construction and Materials, in effect as of the Proposal Due Date, as described in Part 2, § DB 100 and as follows:

The following amendments apply to Section 100 of the New York State Department of Transportation Standard Specifications Construction and Materials in effect as of the Proposal Due Date:

A. All references to “Contractor” shall mean “Design-Builder”;

B. All references to “Bid(s)”, “Bidder(s)” and “Bidding”, shall mean “Proposal(s)”, “Proposer(s)” and “Proposing” respectively;

C. All references to “Contract Plans” shall mean “Contract Documents”;

D. All references to “the Engineer” or “the Engineer-in-Charge” shall mean the Department’s Project Manager or designated representative;

E. All references to a section, denoted by “§”, that is covered in Part 2, § DB 100, shall mean “§ DB”.

Replace Section 100 of the NYSDOT Standard Specifications Construction and Materials by Part 2, DB § 100, except as noted in Part 2, § DB 100.

SP-2. SPECIAL PROVISION TO SECTIONS 200 THROUGH 699 OF THE NYSDOT STANDARD SPECIFICATIONS CONSTRUCTION AND MATERIAL AND APPLICABLE NYSDOT SPECIAL SPECIFICATIONS

The following amendments apply to Sections 200 through 699 inclusive of the New York State Department of Transportation Standard Specifications Construction and Materials in effect as of the Proposal Due Date, and any NYSDOT Special Specifications referenced in Part 3, Project Requirements or which otherwise might be required during the design and construction of the Project, with the exception of Section 800 Specifications contained in Part 8 – Special Specifications:

A. All contact with Department staff or offices except for personnel assigned to the Project shall be through the Department’s Project Manager.

B. References to “plans” or “contract plans” shall mean “Design Plans” prepared by the Design-Builder.

C. There will be no measurement for payment except for Unit Priced items specifically shown in the Price Proposal. All Work will be paid on the basis specified in Part 2 – DB § 109.

D. All references to “Section 100” Specifications shall mean equivalent references to Part 2 - DB § 100 Specifications.

E. Delete the following phrases:

   1) “deemed necessary by the Engineer”;

2) “to the satisfaction of the Engineer”;

3) “as determined by the Engineer”;

4) “subject to the approval of the Engineer”;

5) “as specified by the Engineer”;

6) “approved by the Engineer”;

7) “ordered by the Engineer”;

8) “established by the Engineer”;

9) “acceptable to the Engineer”;

Or similar phrases denoting instruction by or consent from the Engineer.

If the relevant information is not shown on the Design Plans or covered in the Project Specifications, the Design-Builder shall have the Designer change the Design Plans and/or Project Specifications to incorporate the missing information.

F. Delete references to “payment lines” and replace with “lines shown on the Design Plans.”

G. References to “Proposal” or “proposal” shall be interpreted to mean the “Contract Documents”;

H. Unless specifically stated otherwise in the Contract Documents, sampling and testing specified to be done by the Engineer or other Department staff, shall be performed by the Design-Builder’s Construction Quality Control (QC) staff;

I. “Submission” or “submittal” used in the design shall be subject to review and Department acceptance per Part 3, Section 5.8;

J. All references to “the Engineer” or “the Engineer-in-Charge” shall mean the Department’s Project Manager or designated representative;

K. All references to “Contractor” shall mean “Design-Builder”;

L. References to: “Deputy Chief Engineer Design, Construction, Technical Services”; any Division in Main Office NYSDOT; “Regional Director”; “Regional Design Engineer”; “Materials Engineer”; “Construction Engineer”; or any other similar title and role shall mean the Department’s Project Manager or a designated representative;

M. References to “Contract Award” shall mean Notice to Proceed;

N. References to “preconstruction meeting” shall mean “pre-work conference”;

O. There shall be no quality payment adjustments under this Contract;

P. In each Specification delete the sections titled “Method of Measurement” and “Basis of Payment”;

Q. Delete Table 619-7 – Basic Work Zone Traffic Control Non-Payment, in Section 619-5 – Basis of Payment and replace with the following Table

BASIC WORK ZONE TRAFFIC CONTROL NON-PAYMENT	
Original Contract Amount	Non-Payment Amount

From More Than	To and Including	
$ 0	$ 500,000	$ 200
$ 500,000	$ 2,000,000	$ 400
$ 2,000,000	$ 5,000,000	$ 500
$ 5,000,000	$ 10,000,000	$ 750
$ 10,000,000	$ 20,000,000	$ 1,000
$ 20,000,000	$ 50,000,000	$ 3,000
$ 50,000,000	$250,000,000	$ 5,000
$250,000,000	$500,000,000	$10,000
$500,000,000	-	$20,000

R. Add the following to Section 648 – Subsurface Explorations:

"The Design-Builder shall be responsible to determine the nature, extent, and locations of subsurface explorations needed to obtain data and support subsequent analysis, design, and construction. The Design-Builder shall also be responsible for determining the adequacy of any subsurface exploration data provided by the Department to support its analyses, design, and construction and to supplement such data provided by the Department as the Design-Builder deems necessary.

"In planning and conducting its subsurface explorations, the Design-Builder shall comply with the technical requirements of Section 648, unless the Department agrees otherwise. The Design-Builder is not required to comply with the administrative requirements specified in Section 648".

S. Delete Section 697 – Field Change Payment;

T. Delete Section 698 – Price Adjustments; and

U. Delete Section 699 – Mobilization.

SP-3. CRITICAL PATH METHOD SCHEDULE

3.1 DESCRIPTION

The schedule submitted in accordance with DB Section 108-01 shall consist of preparing, maintaining and submitting a Progress Schedule using the Critical Path Method on Primavera P6 software, or newer release, which demonstrates complete fulfillment of all work including engineering, construction and administration of the Contract. All work to prepare and maintain the Progress Schedule shall be performed using the scheduling software application provided by the Department on network servers and accessed through the Internet with Department provided user accounts. The Design-Builder shall regularly revise and update the Progress Schedule, and use it in planning, coordinating, and performing all work. Schedule activities shall accurately depict the entire scope of work to be performed to complete the project including, but not limited to, all work to be performed by the Design-Builder, consultants, subcontractors, fabricators, suppliers, the Department, and others, contributing to the project.

3.2 DEFINITIONS

Activity - A discrete, identifiable task or event that usually has an expected duration, has a definable Start Date and/or Finish Date, and can be used to plan, schedule, and monitor a project.

Activity, Controlling - The first incomplete activity on the critical path.

Activity, Critical - An activity on the critical path.

Actual Start date - At the activity level, the Actual Start date represents the point in time that meaningful work actually started on an activity.

Actual Finish date - At the activity level, the Actual Finish date represents the point in time that work actually ended on an activity (Note: in some applications areas, the activity is considered "finished" when work is "substantially complete."); at the project level, the Actual Finish date represents the point in time that the Design-Builder completes all work on the Project and it is accepted by the Project Manager.

Baseline Progress Schedule - The Progress Schedule submitted by the Design-Builder that shows the plan to complete the Contract Work. The Baseline Progress Schedule represents the Design-Builder's plan at the time of Notice to Proceed for completing the Project.

Completion Date, Contract - The date specified in the Contract for completion of the Project or a revised date resulting from properly executed time extensions.

Completion Date Scheduled - The date forecasted by the Progress Schedule for the completion of the Project.

Constraint - A schedule restriction imposed on the Start or Finish date(s) of an activity that modifies or overrides an activity's relationships.

Contemporaneous Period Analysis Method – A technique for evaluating schedule delays or time savings. The analysis period for the purpose of these provisions shall be monthly in each regular progress update to the schedule.

Data Date – The date entered in the Project Details, in the Dates tab, which is used as the starting point to calculate the schedule. For the Baseline Progress Schedule submission the Data Date shall be the Notice to Proceed Date; for Monthly Progress Schedule submissions, the Data Date shall be the date up to which the Design-Builder is reporting progress (generally the last work day for the month, and for Weekly Status Reports the Data Date shall be the Saturday of that week). Everything occurring earlier than the Data Date is "as-built" and everything on or after the Data Date is "planned."

Deliverable – Any measurable, tangible, verifiable outcome, result, or item that must be produced to complete a project or part of a project. Often used more narrowly in reference to an external deliverable, this is a deliverable that is subject to approval by the Department.

Design-Builder's First Day of Construction Work – The day the Design-Builder starts field work within the highway Right-of-Way, which is entered as a Start milestone activity in the schedule.

Design-Builder's Last Day of Work – The last day of physical work in the field, and the Design-Builder has demobilized (no longer has any presence within the highway right-of-way).

Design-Builder Work Day - A calendar day scheduled for active prosecution of Contract work by the Design-Builder or the Design-Builder's representative.

Draft Baseline Progress Schedule – An optional schedule submission that reflects an outline

of the schedule format and content proposed by the Design-Builder's Project Scheduler to comply with the schedule provisions in the contract to solicit early comments by the Project Manager, prior to the submittal of complete Baseline Progress Schedule.

Duration, Original - The original estimated number of work days (not including holidays or other non-working periods) in which the work task associated with the activity is expected to be performed. (The number of calendar days may be different based on the calendar assigned to the activity.) For certain activities such as concrete curing, or others approved by the Project Manager, the calendar shall not reflect non-work days.

Duration, Remaining - The estimated time, expressed in work days (not including holidays or other non-working periods), needed to complete an activity that has started but has not finished.

Early Completion Schedule - A progress schedule will be considered an early completion schedule when the schedule submitted by the Design-Builder indicates a completion date that is earlier than the specified Project Completion Date, or when the Finish date of any Interim Milestone work activity is earlier than the date specified in the Contract. This includes, but is not limited to, activities subject to Incentive/Disincentive provisions and/or specific Liquidated Damages provisions, and Lane Rental activities.

Early Dates – The earliest date an activity can start or finish based upon logic and durations. Calculated by the software application when scheduling the Project.

Enterprise Project Management Database (EPMD) – The Department's database of construction project Progress Schedules.

Final Baseline Progress Schedule - The plan, accepted by the Department, against which the Design-Builder's progress is measured. The Final Baseline Progress Schedule represents the plan, after Notice to Proceed is issued to the Design-Builder, of how procurement, design and construction is expected to proceed. Once the Final Baseline Progress Schedule is accepted by the Department's Project Manager it is saved and used as a basis to compare against Progress Schedules Updates.

Float Suppression - Utilization of zero free float constraints which allows an activity to start as late as possible by using all its' available free float. This technique allows activities to appear more critical than if the activity's total float was based on early dates. Assigning zero free float prevents true sharing of total float between Department and the Design-Builder. Utilization of overly generous activity durations and overly restrictive calendar non-working periods are also considered to cause float suppression.

Float, Free - The amount an activity can slip without delaying the immediate successor activities. Free Float is the property of an activity and not the network path.

Float, Total - The amount of time an activity (or chain of activities) can be delayed from its early start without delaying the Project Completion Date. Total Float is calculated and reported for each activity in a network, however, Total Float is an attribute of a network path and not associated with any one specific activity along that path.

Fragnet – A subdivision of a project network diagram usually representing some portion of the Project.

Global data – Data classified by Oracle Primavera software as Global, including Project Codes, Global Activity Codes, Global Calendars, Resource Calendars, Global Filters, Resources, Global Reports, User Defined Fields and Unit of Measure.

Initial Baseline Progress Schedule - The Progress Schedule submitted by the Proposer that

shows the plan to complete the Contract Work. The Initial Baseline Progress Schedule represents the Design-Builder's plan at the time of Proposal Due Date for completing the Project.

Key Plans - Key Plans are graphic representations made by the Design-Builder's Project Scheduler on paper copies of the appropriate Contract plan sheets that reflect the Design-Builder's planned breakdown of the Project for scheduling purposes to efficiently communicate the Design-Builder's activity coding scheme to State scheduling staff. The key plans prepared by the Design-Builder shall clearly define the boundaries of the work for each designated Area, the operations contained in various Stages of work, and work in the Work Zone Traffic Control (WZTC) Phases. The alphanumeric codes on the key plans shall match the code values for the activity code "Area", "Stage", and "WZTC Phase" in the Progress Schedule.

Late Dates –The latest an activity can start or finish without delaying the day of completion.

Longest Path - The sequence of activities through the Progress Schedule network that establishes the Scheduled Completion Date

Milestone – An activity with zero duration that typically represents a significant event, usually the beginning and end of the Project, milestones set forth in the Contract, construction stages, a major work package, or the Contract interim time-related clauses.

Narrative Report - A descriptive report submitted with each Progress Schedule.

Open End - The condition that exists when an activity has either no predecessor or no successor, or when an activity's only predecessor relationship is a finish-to-finish relationship or only successor relationship is a start-to-start relationship.

Predecessor - An activity that is defined by Schedule logic to precede another activity. A predecessor may control the Start Date or Finish Date of its successor.

Progress Schedule – A general Primavera P6 Schedule as defined by this Special Provision.

Progress Schedule Delay - An event, action, or other factor that delays the critical path of the Progress Schedule and extends the time needed for completion of the construction project.

Progress Schedule Revision – Revisions to the Progress Schedule ensure it accurately reflects the current means and methods of how the Project is anticipated to progress, including modifications made to any of the following items: (a) changes in logic connections between activities; (b) changes in constraints; (c) changes to activity descriptions; (d) activity additions or deletions; (e) changes in activity code assignments; (f) changes in activity production rates; and (g) changes in calendar assignments.

Progress Schedule Update – Changes to the Progress Schedule that reflect the status of activities that have commenced or have been completed, including the following items: (a) Actual Start date and or Actual Finish date as appropriate; (b) Remaining Duration for activities commenced and not complete; and (c) Suspend or Resume dates for activities commenced and not complete.

Project Scheduler – The person that is responsible for developing and maintaining the Progress Schedule.

Projects Planned Start Date – The date entered in the Project Details, in the Dates tab, that reflects the Design-Builder's planned start of work (based on Contract requirements, and reasonable expectation for a Notice to Proceed) at the Proposal Due Date.

Recovery Schedule – A schedule depicting the plan for recovery of significant time lost on the

Project. This separate CPM schedule submission shall provide the resolution and include appropriate changes in network logic, calendar adjustments, or resource assignments.

Relationships - The interdependence among activities. Relationships link an activity to its predecessors and successors. Relationships are defined as:

Finish to Start - The successor activity can start only when the current activity finishes.

Finish to Finish – The finish of the successor activity depends on the finish of the current activity.

Start to Start – The start of the successor activity depends on the start of the current activity.

Start to Finish – The successor activity cannot finish until the current activity starts.

Scheduling/Leveling Report – The report generated by the software application when a user "Schedules" the project. It documents the settings used when scheduling the project, along with project statistics, errors/warnings, scheduling/leveling results, exceptions, etc.

Successor - An activity that is defined by Schedule logic to succeed another activity. The Start Date or Finish Date of a successor may be controlled by its predecessor.

Time Impact Analysis (TIA) – A technique to demonstrate the comparison of a time impact of a Progress Schedule revision prior to a change in the Contract work, against the current accepted Progress Schedule. Also known as a "What-If" analysis. A Time Impact Analysis is used to evaluate proposed changes to future work activities in the schedule.

Weekly Status Report – The report generated weekly from the updated Progress Schedule in an electronic Adobe Acrobat PDF format that reflects a Data Date for that Progress Schedule Update period. The report shall be formatted to fit ANSI Size D or B paper, using the Weekly Status Report Layout The Report shall be used in the weekly progress meetings.

Work Breakdown Structure (WBS) - A deliverable-oriented grouping of project elements, which organizes and defines the total scope of the Project. Each descending level represents an increasingly detailed definition of project components or work packages.

Work Package - A deliverable at the lowest level of the work breakdown structure. A work package contains activities.

3.3 CONSTRUCTION DETAILS

3.3.1 Project Scheduler

The Design-Builder shall designate an individual, entitled the Project Scheduler, who will develop and maintain the Progress Schedule. The Project Scheduler shall be present at the Prestart Schedule Meeting, prepared to discuss, in detail, the proposed sequence of work and methods of operation, and how that information will be communicated through the Progress Schedule. The Project Scheduler shall attend all meetings, or receive meeting minutes that outline schedule related issues of those meetings, which may affect the CPM schedule, including but not limited to those between the Design-Builder and their consultants, subcontractors and between the Design-Builder and the Department. The Project Scheduler shall be knowledgeable of the status of all aspects of the work throughout the length of the Contract, including but not limited to: original Contract work, additional work, new work, and changed conditions of work.

3.3.2 Scheduling Software

The State will provide Primavera P6 software, or newer release, and computer system for use by the Project Manager to review the schedules submitted by the Design-Builder. The Department has installed Primavera P6 software, or newer release, on internet accessible servers for use by the Department's design and construction inspection staff. Appropriate Department personnel, Consultants, and Design-Builders will also have access to these schedules on the Department's Enterprise Project Management Database (EPMD). The Department will determine the location to store the Project Schedule files on the EPMD, and will provide the Design-Builder the naming convention for all Progress Schedule submissions. The Design-Builder shall develop, update, and revise the Progress Schedules using the Department provided Oracle-Primavera P6 software application and the Design-Builder shall store all Progress Schedule files on the Department's EPMD.

The Design-Builder shall submit Request for Access Forms to the Department's Project Manager for each proposed Primavera user to obtain the User ID's and Passwords for access to software and data on the Department's network servers. The form can be downloaded from the following web page:

https://www.nysdot.gov/main/business-center/contractors/construction-division/primavera,

or can be provided by the Project Manager. These forms may be submitted any time following the Contract award. The Department will process these requests and should generally provide the User ID's and Passwords within two weeks of receipt by the Project Manager. Upon approval and authorization by the Project Manager and the Project Management Office, required User ID's and passwords will be provided to the Design-Builder (for the Project Scheduler plus other persons approved by the project Manager) to obtain secure Internet access to the Primavera software and project schedule data. If the Contract is not awarded to this firm, the firm's access to this Project will be removed. Department provided User Id's and Passwords are assigned to specific individuals and shall not be shared with any other users.

The Department will provide the Design-Builder with a schedule template for the Design-Builder's use in developing their Progress Schedule. The Design-Builder shall further develop, update, and revise the Baseline Progress Schedule using Primavera P6 software that has been loaded on the Department's network servers and the Design-Builder shall store all Progress Schedule files on the Department's network servers.

The Department will not "Import" or accept Progress Schedule files from any other computer system.

Access rights within the Primavera database will be created and maintained by the Department. The Department will be the sole entity to modify the EPS structure, the OBS Structure, Project Codes, Global Activity Codes, Global Calendars, User Defined Fields, Security Profiles, Admin Categories, and Admin Preferences.

TABLE 1 – SCHEDULE FILENAME CONVENTION

Progress Schedules	**1st Version**	**2nd Version**	**3rd Version**
Draft Baseline Progress Schedule	D26####-1DB	D26####-2DB	D26####-3DB
Baseline Progress Schedule	D26####-1BPS	D26####-2BPS	D26####-3BPS

Final Baseline Progress Schedule	D26####-1FB	D26####-2FB	D26####-3FB
Month #**1** Progress Schedule Submission	D26####-1SU**1**	D26####-2SU**1**	D26####-3SU**1**
Month #**2** Progress Schedule Submission	D26####-1SU**2**	D26####-2SU**2**	D26####-3SU**2**
As-Built Progress Schedule (Last Progress Schedule)	D26####-1AB	D26####-2AB	D26####-3AB
1st Time Impact Analysis	D26####-1TIA1	D26####-2TIA1	D26####-3TIA1
1st Recovery Schedule	D26####-1RS1	D26####-2RS1	D26####-3RS1

Primavera software and schedule data on the Department's EPMD will generally be available for the Design-Builder's use at all times unless system maintenance (i.e. backups, upgrades, etc.) is being performed. System maintenance will generally be conducted over short time periods between the hours of 10 PM – 6AM, Monday - Friday and on weekends. The Department does perform regular backup of data contained in the EPMD and will make every effort to restore the latest historical copy of Schedule submissions in the event of any data failure of the EPMD. The Design-Builder shall export copies of Project Progress Schedules, Recovery Schedules, and TIA Schedules, after data modifications have been made as their backup of these submissions. In the event a Design-Builder's authorized user cannot access the software from 6AM to 10PM Monday through Friday, the Design-Builder shall provide written notification to the Project Manager.

Project schedules are developed from the Design-Builder's knowledge of the Project, and the means and methods represented in those schedules are based on the Design-Builder's understanding of the Contract documents, and the Design-Builder's past experience, which are unique to the Design-Builder. Schedule activity data and logic are therefore the intellectual property of the Design-Builder and will not be made available to other Design-Builders. All other schedule data, and all Enterprise data residing on the network servers, are the sole property of the Department.

3.3.3 Prestart Schedule Meeting

The Design-Builder shall contact the Department's Project Manager within ten (10) business days of Contract Notice to Proceed to schedule a Prestart Schedule Meeting. The purpose of this meeting is to discuss essential matters pertaining to the satisfactory scheduling of Project activities, and to resolve any known questions regarding interpretation of the contract requirements for this work.

The Project Scheduler shall be prepared to discuss the following:

1. The proposed hierarchal Work Breakdown Structure (WBS) for the Progress Schedules.
2. The proposed Project calendars.
3. The proposed Project activity codes, and various code values for each activity code.
4. Specifics of any contract Time-Related Clauses (Incentive/Disincentive, Liquidated Damages, Lane Rental, etc.);
5. The Design-Builder's schedule methodology to be employed, proposed work sequence and any proposed deviations from the contract plans with respect to Staging or Work Zone Traffic Control phasing.
6. Copies of the Key Plans shall be provided at the meeting.

7. The factors that the Design-Builder determines to control the completion of the Project and any milestone activity completion dates contained therein.
8. The Project Scheduler shall provide an outline for the content of the Narrative report for future Progress Schedule submissions.
9. Schedule submission protocol for Progress Schedule submissions.

The Design-Builder shall submit to the Department's Project Manager for review one week prior to the Prestart Schedule Meeting a copy of the Key Plans, a print out of the proposed Work Breakdown Structure, a print out of each of the proposed Project Calendars showing the Work days versus non-work days and hours per day, and a list of the Code Values for each Project Activity Code proposed to be used in the schedules.

The Department's Project Manager will be available to answer questions regarding scheduling, including: the availability of Department supplied electronic file(s) containing sample project schedule information, sample progress schedule narratives, Special Notes for CPM Scheduling, and required standard format for CPM Progress Schedules for contract work. The Design-Builder shall schedule meetings as necessary with the Department's Project Manager to discuss schedule development and resolve schedule issues, until the Final Baseline Progress Schedule is accepted by the Department's Project Manager.

The Design-Builder is encouraged, but not required, to submit a Draft Baseline Progress Schedule that demonstrates a sample of how the Project Scheduler's proposed alphanumeric coding structure and the activity identification system for labeling work activities in the CPM progress schedule will conform to the detailed requirements of this Special Provision. The review and comment by the Project Manager of the sample schedule should assist the Project Scheduler in assuring the first submittal of the Baseline Progress Schedule will be in general conformance with the requirements of this Special Provision and other contract requirements, and that major rework of the Baseline Progress Schedule will not be required. This submittal may be made anytime following the Contract Award. Critical items for this review should include but are not limited to: the proposed WBS for subsequent Progress Schedules; the proposed Project Calendars; project Planned Start date; major milestone activities (i.e. - Award, Notice to Proceed, Project Completion); and between fifty to one hundred summary activities for the major work deliverables of the Contract (i.e. – Design bridge 1, design bridge 2, construct bridge 1, construct bridge 2, etc.) that have assigned Activity Ids, Activity Descriptions, Activity Durations, Predecessors, Successors, and Activity Relationships. These summary activities will be broken down into, or supplemented with, individual work activities for the baseline submission. To the extent practicable, the Draft Baseline Progress Schedule should include administrative and procurement activities to be accomplished during the Contract; planned submittal, review, and approval dates for shop drawings, working drawings, fabrication drawings, and Design-Builder supplied plans, procedures, and specifications.

Any submission of a Draft Baseline Progress Schedule should be accompanied by a written Narrative that provides details of the Calendar assignments of work days versus non-working days, outlines the sequence of planned operations to complete the Project Work, and provides the proposed Activity Codes and Code values to be assigned to activities in future submissions of Project Progress Schedules. The Department's Project Manager will review the logic diagram, coding structure, activity identification system, and Narrative; and provide comments for required changes by the Project Scheduler for implementation in the submission of the

Baseline Progress Schedule. The Department's Project Manager will provide written comments on major deficiencies within five (5) Work Days of receipt.

3.3.4 Progress Schedule

3.3.4.1 General

In addition to the attributes of the Progress Schedule provisions as set forth in §108-01, the Design-Builder shall prepare, furnish, and maintain a computer-generated Progress Schedule using the Critical Path Method (CPM) utilizing Primavera scheduling software on the Department's network servers. The CPM Progress Schedule shall be prepared based on the principles defined by the latest issue of the Construction Planning & Scheduling Manual published by the Associated General Contractors of America, except where superseded by the Contract documents such as the Regional CPM Special Notes (if applicable) and this Special Provision.

The Design-Builder and the Department shall use the Progress Schedule to manage the Work, including but not limited to the activities of the Design-Builder, subconsultants, subcontractors, fabricators, the Department, other involved State agencies and authorities, other entities such as utilities and municipalities, and all other relevant parties.

No work other than installation of the Engineer's Field Office, mobilization, procurement and administrative activities, installation of construction signs, installation of erosion and pollution protection, clearing and grubbing, field measurements, and survey and stakeout will be permitted to start until the Baseline Progress Schedule has been submitted to the Department's Project Manager, and the Department's Project Manager determines there are no deficiencies consistent with those identified in paragraph 5.3.5.1.

The Design-Builder will be the sole entity allowed to physically modify the following data within the Progress Schedule: activity IDs; activity descriptions; activity durations; relationships between activities; successors and predecessors, actual start and actual finish dates of activities; planned start and planned finish dates of activities; and activity resources (with the exception that activities assigned resources labeled to reflect Department personnel may be changed to reflect specific individuals, or job roles, within the Department).

The Department may modify certain data associated with the Progress Schedule to ensure conformance to the Department's Enterprise Project Management standard schedule format. This means that the Department may: create additional layouts, filters and reports; create and edit additional user defined custom data fields; assign Project Codes; add and assign additional project Activity Codes; add and assign additional Cost Account Codes; add and assign additional Resource Codes; enter data in Notebook tabs; modify calendar ID's (although not the calendar itself); etc; that do not alter the established activities or schedule logic of the Design-Builder. The Department's Project Manager will communicate to the Design-Builder the types and scope of changes planned to be made to the Progress Schedules prior to the implementation of those changes. The Design-Builder shall not delete or modify any schedule data entered by the Department without prior approval by the Department's Project Manager. The schedule data added by the Department shall be incorporated into future schedule submissions of the Design-Builder.

The Design-Builder shall develop the Progress Schedule using, to the maximum extent practicable, the Global Activity Codes (DOT GLOBAL) identified in the Department's Primavera

enterprise solution. Any schedule "Layouts", "Filters" and "Report" formats that the Design-Builder develops for the various Progress Schedules submissions to the Department's Project Manager shall be saved and made available to all other users of the Project Schedule with a name that includes the contract D#.

The Department may make copies of the Progress Schedules to perform 'what-if' type analysis, which may involve any type of modification to those copies of the schedules.

The purpose of the Progress Schedule, and scheduling provisions in the contract, shall be to:

- Ensure that the Design-Builder and the Department have a detailed plan and resources to complete the Project in accordance with contract time requirements;
- Provide a means of monitoring the progress of the Work;
- Aid in communication and coordination of activities among all affected parties;
- Analyze the effect of changed conditions on any milestone dates or on the Project Completion Date;
- Analyze the effect of change orders for extra work or deductions, and unanticipated delays, on the Project Completion Date;
- Establish a standard methodology for time adjustment analysis based on the principles of the Critical Path Method of scheduling, to analyze delays and resolve construction disputes concerning time;
- Determine appropriate extensions or reductions of Contract Time.

In scheduling and executing the Work, the Design-Builder shall:

a) Sequence the Work commensurate with the Design-Builder's abilities, resources and the Contract documents. The scheduling of activities is the responsibility of the Design-Builder.

b) Ensure that Progress Schedules prepared by the Project Scheduler for submission to the Department are in compliance with the Contract. The intent should be that Schedule submissions and accompanying Narratives are timely, complete, accurate, and in compliance with the Contract.

c) Communicate all Contract changes, and decisions or actions taken by the Design-Builder and all subconsultants, subcontractors, fabricators, etc, that effect the Progress Schedule to the Project Scheduler in a timely manner to allow appropriate development, maintenance, and update of the Progress Schedule.

d) Include all Work contained in the Contract and all Work directed in writing by the Project Manager. Work activities directed by the Project Manager to be added to the Contract shall be included in the next Monthly Progress Schedule submission.

e) Assure that Progress Schedule Updates reflect the actual dates that Work activities started and completed in the field.

f) Break a schedule activity into multiple activities to reflect a discontinuity in the Work if a work activity is suspended in the field and restarted at a later date, and the break between when the Work was suspended to when it was resumed is significant compared to the original activity duration.

g) Ensure the Progress Schedule contains all work constraints and Milestones defined in the Contract.

h) Schedule the Work using such procedures and staging or phasing as required by the Contract. Work designated as part of separate stages may be performed concurrently with other stages where allowed by the Contract or where approved by the Department.

Failure by the Design-Builder to include any element of work required by the Contract in the accepted Progress Schedule does not relieve the Design-Builder from its responsibility to perform such work.

Should the Design-Builder choose to show activities in the schedule that reflects their plan of Work prior to the Contract Award, the Department does not incur any liability and such Work being performed between the Proposal Due Date and the Contract Award Date shall be considered at risk work.

Errors or omissions on Schedules shall not relieve the Design-Builder from finishing all work within the time limit specified for completion of the Contract.

If the Design-Builder fails to comply with the provisions of this Special Provision, the Department's Project Manager may suspend payment for any Contract Work.

3.3.4.2 **Baseline Progress Schedule**

a) The Design-Builder shall ensure the Schedule accurately reflects the proposed approach to accomplish the work outlined in the Contract documents and conforms to all requirements of this Special Provision. The Baseline Progress Schedule shall show all the activities for the design and construction for all Work in the Contract and shall indicate the date at which the Work begins and is complete. The Baseline Progress Schedule shall also show design activities including, but not limited to, the various stages of design, design checks, design reviews and the submission dates of checked designs. Any Interim Milestone(s) shall be shown in the Baseline Progress Schedule and may be used by the Department for the assessment of Liquidated Damages.

b) The schedule shall define a complete logical plan that can realistically be accomplished, to execute the Work defined in the Contract.

c) The Schedule shall comply with the work constraints and milestones defined in the Contract as well as all other contractual terms and conditions. The Schedule shall be consistent in all respects with the specific interim Time-Related Contract Provisions, and any order of work requirements of the Contract documents. The Schedule shall meet all interim milestone dates and shall not extend beyond the Project Completion Date. This submission shall reflect the Design-Builder's plan at the time of Contract Award, and prior to the start of any Work. No negative float is allowed in the Baseline Progress Schedule submission.

d) Detailed Schedule Requirements - As a minimum, the Design-Builder shall address the following in the Baseline Progress Schedule:

i) Defining Project details and defaults – Within the Dates tab, the "Planned Start" shall be either the Proposal Due Date or the Contract Award Date and the "Data Date"

shall be the Notice to Proceed date. Within the Settings tab, define the Critical Activities as the “Longest Path”. The Project Scheduler role does not have security privileges to change this data in the project Details tab, so requests for changes to this data needs to be forwarded to the CPMSchedulingSection@dot.ny.gov; include in your request the contract D number and the Project ID.

ii) Sufficient activities shall be included to assure that there is adequate planning for the entire Project. The appropriate number of activities will be largely dependent upon the nature, size, and complexity of the Project. In addition to all site construction activities, network activities shall include: activities necessary to depict the procurement/submittal process including shop drawings and sample submittals; the fabrication and delivery of key and long-lead procurement elements; testing of materials, plants, and equipment; settlement or surcharge periods activities; sampling and testing period activities; cure periods; activities related to temporary structures or systems; activities assigned to subcontractors, fabricators, or suppliers; erection and removal of falsework and shoring; major traffic stage switches; activities assigned to the Department and other involved State agencies and authorities, including final inspection; activities to perform punch list work; and activities assigned to other entities such as utilities, municipalities, County government/agencies, and other adjacent contractors. The Schedule shall indicate intended submittal dates, and depict the review and approval periods as defined in the Contract Documents for Department review.

The following activities shall be incorporated into the Progress Schedule:

Activity ID	Activity Description	Duration	Follows	Logic Tie	Responsible Party
C00035	Notification to Proceed (NTP)	1 Work Days			NYSDOT
C00036	Get Start Meetings	1 Work Day	C00035	FS	NYSDOT
C00005	Pre-work Conference	1 Work Day	C00035	FS	NYSDOT
C00040	Prepare/Submit Safety & Health Plan	Minimum 1 Work Day	C00035	FS	Design Builder
C00045	Approve Safety & Health Plan	10 Work Days	C00040	FS	NYSDOT
C00055	Set Up Engineer's Field Office	10 Work Days	C00035	FS	Design Builder
M00050	Design-Builder's First Day of Construction Work	0 - Start Milestone	C00055, C00045	FS	Design Builder
C00060	Prepare & Submit Baseline Progress Schedule	10 Work Days from receipt of NTP	C00035	FS	Design Builder
C00065	Review Baseline Progress Schedule	10 Work Days	C00060	FS	NYSDOT
C00070	Accept Baseline Progress Schedule	1 Work Days (see Note 1)	C00065	FS	NYSDOT
C00075	Mobilization	Minimum 1 Work Day	M00050	SS	Design Builder
M00100	Field Work Begins	0 - Start Milestone	M00050, C00055, C00060		Design Builder
M00900	Substantial Completion	0 - Finish Milestone	See definition	FF	Design Builder
C09010	Other Agency Inspection	20 Work Days	M00900	FS	Others
C09020	NYSDOT Inspection	15 Work Days	M00900	FS	NYSDOT
C09030	Punchlist work	15 Work Days	C09020	FS	Design Builder
C09040	Demobilization	Minimum 1 Work Day	C09020	FS	Design Builder
M00950	Design-Builder's Last Day of Work	0 - Finish Milestone	C09040	FS	Design-Builder
M00999	Anticipated Project Completion	0 - Finish Milestone	M00950	FF	Design-Builder

Note 1 – Acceptance Date shall not exceed 40 Work Days from Notice of Award. The Logic Tie shown shall be used as a relationship from the Predecessor to the Activity in the same row.

iii) **Work Breakdown Structure (WBS)** - A multi level hierarchal WBS shall be incorporated. The levels (nodes) shall include, but not be limited to:

Level 1- is the project level; and shall have the project name.

Level 2- Shall have seven nodes, “REPORTING MILESTONES”, “PLANNING”, “DESIGN”, “ROW”, “PROJECT PROCUREMENT”, “CONSTRUCTION”, and “PROJECT MANAGEMENT”

Level 3- shall have three nodes under “CONSTRUCTION”: “PRE-CONSTRUCTION”; “CONSTRUCTION OPERATIONS”; and “POST CONSTRUCTION/CLOSEOUT”. In addition, shall have at least two nodes under Design: Design Unit design and review.

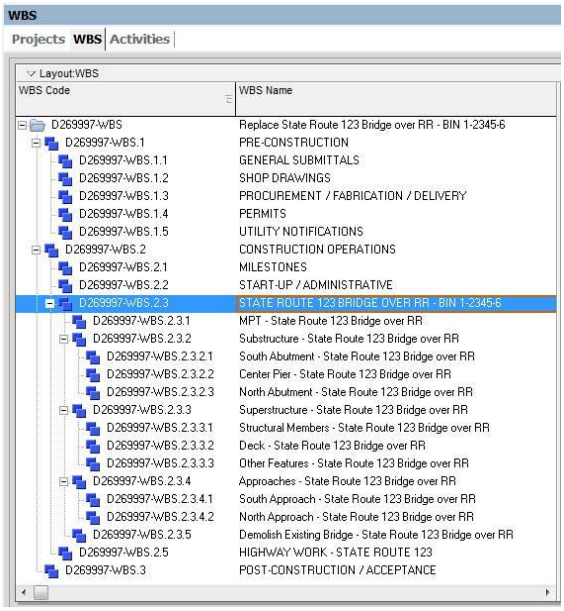
For all projects under “PRE-CONSTRUCTION” a fourth level of the WBS shall consist of at least the following four sub nodes: “GENERAL SUBMITTALS”, “SHOP DRAWINGS”, “PROCUREMENT/FABRICATION/DELIVERY”, and “UTILITY COORDINATION”.

Under the “CONSTRUCTION OPERATIONS” node, the grouping of activities may vary depending on the scope and nature of the project work. The Design-Builder shall coordinate with the NYSDOT Project Manager to determine the best way to represent (group activities) the project deliverables (i.e. Bridge, Roundabout, Highway segment, Interchange, Intersection, etc). The NYSDOT Project Manager may require sub nodes for AREA (geographic area within the project limits), STAGE, or for a bridge project SUBSTRUCTURE, SUPERSTRUCTURE, and DECK.

Generally Level 4 would be by geographic area within the project limits, Level 5 would be by highway feature (bridge, highway segment, intersection), Level 6 the highway features should be broken into their components; such as, a bridge into components such as Substructure, Superstructure, and Deck, or a highway segment into components such as pavement, drainage, earthwork, lighting, traffic signals, etc.

An example Work Breakdown Structure is shown below in Figure 1

FIGURE 1



iv) **Activity ID** - Include a unique identification number for each activity. Activity ID numbers shall not be changed, or reassigned. Task type Activity IDs shall be prefixed by a “C”. Milestone type activities shall be prefixed by an “M”.

v) **Activity Name** - Clearly and uniquely define each activity name with a description of the work that is readily identifiable to inspection staff and the progress of each activity can be measured. Each Activity shall have a narrative description consisting at a minimum of a verb or work function (i.e. form, pour, excavate, etc), an object (i.e. slab, footing, wall, etc), and a location (i.e. STA, bridge or retaining wall number, street, etc). The work related to each Activity shall be limited to one Area of the Contract, one Stage of the Contract, one WZTC Phase of the Contract, and one Responsible Party of the Contract. The Activity Name shall not be changed for the duration of the contract without approval of the NYSDOT Project Manager.

vi) **Milestone Type Activities** - Include activities for all Contract milestones that define significant contractual events such as Contract Award, Notice to Proceed, Design-Builder Start Work, Substantial Completion Date, Project Completion Date, and coordination points with outside entities such as utilities, State agencies, Authorities, municipalities, Time-Related Contract Provisions, etc.

All milestone activities in the Schedule shall be assigned the standard Global calendar named ‘NYSDOT Milestone/Curing 365 Day / 8 hour”, this calendar should also be assigned to any activities for concrete curing.

- The Contract Award milestone shall have a primary constraint of “Finish On” and the date of Contract signature by the State Comptroller,
- The Project Completion milestone shall have a primary constraint of “Finish on or before” and the Project Completion Date.

- The Design-Builder Start Work" Start milestone activity, that will eventually reflect the actual date the Design-Builder started Work authorized under the contract.

All maintenance type work activities, such as maintaining temporary concrete barrier or rodent control, such be shown on the schedule with Start and Finish milestone type activities not task dependent activities.

vii) **Activity Durations** – Define the Original Duration of each activity in units of whole work days, except for activities of less than one day duration which should be shown in units of tenths of a day. Except submittal/procurement activities, durations shall not exceed 15 work days unless approved by the Department's Project Manager. Durations for Department submittal reviews shall meet the requirements set forth in the Contract documents. If requested by the Department's Project Manager, the Design-Builder shall justify the reasonableness of planned activity time durations. Task Dependent activities shall not have zero durations.

viii) **Production Rates** – For each non-administrative work activity in the schedule the Design-Builder shall enter the quantity of the predominate item of the work activity into the field labeled "PR Quantity", the Unit of Measure for that item in the field labeled "PR Unit", the anticipated production rate of the equipment and labor (crew) resources for that work activity in the field labeled "Production Rate / Day", and the associated duration for that work activity in the field labeled "PR Duration". These are all Activity level UDF fields, and can be found in the activity Layout named Contractor Production Rates. If requested by the Department's Project Manager, the Design-Builder shall furnish other information needed to justify the reasonableness of activity durations.

ix) **Activity Relationships** - Clearly assign predecessors and successors relationships to each activity and assign appropriate logic ties between activities (Finish to Start, Start to Start, Finish to Finish, etc.). Do not have any open ended activities, with the exception of the first activity and last activity in the schedule. An activity may only appear once as a predecessor or successor to another specific activity, but may be assigned as a predecessor or successor to many different activities. Do not include inappropriate logic ties with Milestone activities (For a finish milestone activity: a predecessor shall only be assigned a Finish to Finish logic tie, a successor shall only be assigned a Finish to Start or Finish to Finish logic tie. For a start milestone: a predecessor shall only be assigned a Finish to Start or Start to Start logic tie, a successor shall only be assigned with a Start to Start logic tie). Lag time may not exceed 10 days. The Design-Builder shall not use negative Lag times.

x) The Design-Builder shall assign the "Contract Award Date" activity as a predecessor to all Review and Approval type activities to be performed by Department staff.

xi) **Activity Constraint Dates** – The Design-Builder shall not have any constrained activities, with the exception of contractual dates, unless the Department's Project Manager accepts such constraints in writing. Milestone activities shall be included for the Contract Award which shall have a primary constraint of "Finish On" and the date of Contract signature by the State Comptroller, and for the anticipated Project Completion Date which shall have a primary constraint of "Finish on or before" and the Project Completion Date indicated in the Contract documents. Only contractual/owner-designated constraints are allowed unless specifically authorized by this Special Provision or the Department's Project Manager. If used, only

Constraints of type, “Finish on or Before”, ‘Start on or After”, or when deemed appropriate by the Engineer “As-Late-As-Possible” are acceptable.

xii) **Activity Dates** – With the exception of contract Milestone dates, “Actual Start” and “Actual Finish” dates and “Planned Start” and “Planned Finish” dates, activity dates shall be calculated by the project scheduler tool within the Primavera software. No Actual Start or Actual Finish dates shall be entered in the Baseline Progress Schedule, with the exception of activities that were completed prior to the Contract Award.

xiii) **Calendars** - Use clearly defined calendars that account for expected seasonal weather conditions (including winter shutdown periods) and environmental permit requirements, for the planning and scheduling of activities. Do not incorporate an activity with a description of “Winter Shutdown” that requires constraints. Provide the work days per week, holidays, the number of shifts per day, and the number of hours per shift by using the Calendar feature called “Time Periods” in the P6 software. Incorporate any seasonal restrictions to the work within calendars assigned to activities.

- Global calendars used in the Progress Schedule shall be those established by the Department. There are only two Global Calendars developed and maintained by the Department for use by Design-Builder’s, they are the following:
  - NYSDOT Milestone/Curing 365 Day / 8 hour
  - State Business Days, 5 Day Work Week w/State Holidays, Field

Changes desired for these calendars shall be forwarded to CPMSchedulingSection@dot.state.ny.us, and if appropriate these changes will be performed by the Office of Construction system admin staff. This will be accomplished by making a copy of the existing Global calendar; the new calendar will then be renamed and modified as necessary.

- Calendars related to specific resources (i.e., a specific person or piece of equipment) shall be established as Resource Calendars, with the Calendar name clearly identifying the resource.
- All other calendars developed by a Design-Builder shall be established as Project Calendars, with the calendar name including the contract D# and describing the function (i.e., D260000 - Asphalt Calendar, D260000 - Concrete Calendar, D260000 - Landscape Calendar, D260000 - Painting Calendar, D260000 – Design-Builder’s 5 Day/8 Hour Workweek). All work activities of the Design-Builder shall be assigned to Project Calendars.
- Activities for shop drawing reviews and other approvals by Department personnel shall be assigned the Department’s standard Global – “State Business Days, 5 Day Work Week w/State Holidays, Field” Calendar that reflects all holidays observed by the State.
- The Baseline Progress Schedule can not include a calendar that reflects any workers working more than 8 hours in any one calendar day or more than 5 days in any one week. (§102-7 LABOR AND EMPLOYMENT) Following the Contract award the Design-Builder can add additional calendars in their next Monthly Progress Schedule submission based on an approved overtime dispensation.

xiv) Clearly define significant interaction points between the Design-Builder, the Department, and other entities including but not limited to: Federal, State and local agencies/authorities; and utilities. All activities of the Department, utility companies, adjacent contracts, and other entities that affect progress and influence any contract required dates including durations shall be shown in the Schedule. This includes dates related to all Permits or Agreements. The Schedule shall give special consideration to sensitive areas such as road closures and parklands and shall indicate any time frames when work is restricted in these sensitive areas as outlined in the permits issued by the regulatory agencies, and provided in the Contract documents.

xv) **Activity Resources** – The Design-Builder is required to enter the major equipment resources to the appropriate activities in the Schedule, these shall include pile drivers, large cranes, asphalt paving equipment, and concrete finishing machines.

It shall be the Design-Builder's responsibility to assure the activity logic in the Schedule properly reflects their resource limitations. If the Design-Builder anticipates multiple crews for the same Schedule activity, these resources shall be documented in the Schedule narrative. As an activity can have only one responsible party, no activity shall involve multiple crews comprised of the Design-Builder and a subcontractor, or multiple subcontractors.

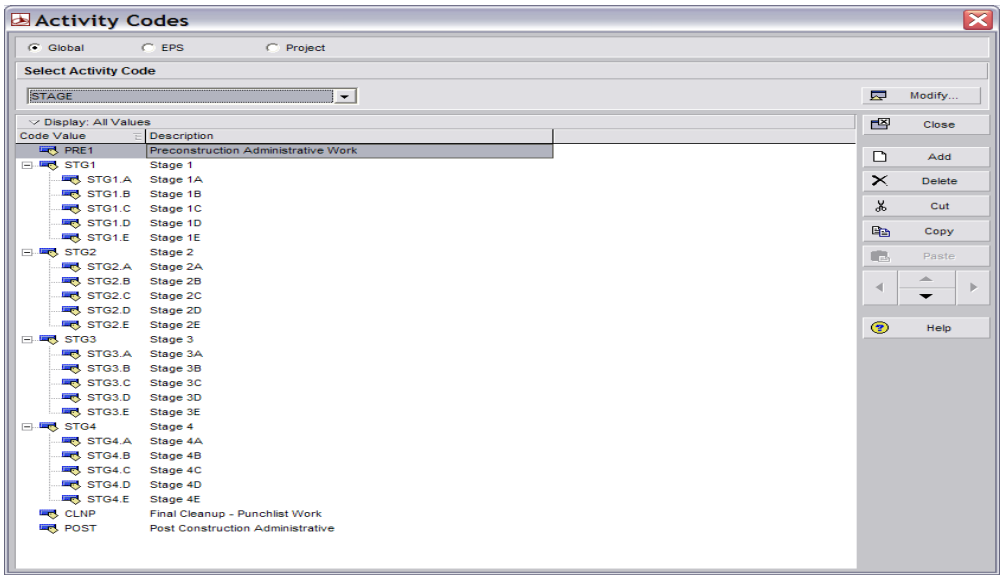
xvi) **Activity Codes** – The Design-Builder shall include a well-defined activity coding structure that allows activities to be sorted and filtered. Activity Codes shall be developed and assigned as needed by the Project Manager to facilitate the use and analysis of the Schedule.

- No Global Activity Codes shall be incorporated in any Progress Schedule submission to the Department's Project Manager except those established by the Department.
- The Design-Builder shall assign the appropriate activity code values to each activity in the Progress Schedule for the following Global Activity Codes that are in the Department's enterprise database:
    1) RESPONSIBLE PARTY (DOT GLOBAL)
    2) STAGE (DOT GLOBAL)
    3) AREA (DOT GLOBAL)
    4) TYPE OF WORK (DOT GLOBAL)
    6) CHANGED (ADDED/DELETED) WORK (DOT GLOBAL)
    7) TIME Related Clauses (DOT GLOBAL)
    8) DELAY (DOT GLOBAL)
    9) DBE (DOT GLOBAL)
- Additional Activity Codes developed for specific projects shall be established as Project Activity Codes. As a minimum this shall include the following:
    1) SUBCONTRACTOR

xvii) **Activity Code Values** – Each Activity Code shall be broken down into various Activity Code Values that are then assigned to activities. For example, the Activity

Code “Stage” shall include a hierarchal arrangement of Activity Code Values as shown below in Figure 2:

FIGURE 2



xviii) **Activity Code Assignments** - For each activity, within the activity details the Design-Builder shall assign Activity Code values to identify the “Responsible Party” (i.e. – Design-Builder, NYSDOT, Utility Co, Municipality) for the work to be performed (one and only one responsible party shall be assigned to each activity), the “Stage” of the contract for the work that will be performed, the “Area” where the work is to be performed, the “WZTC Phase”, and the Type of Work (i.e. - Procurement, Paving, Embankment, Excavation, Electrical, Signing, etc). For activities included in work governed by time-related contract provisions, the appropriate “Time Related” activity code shall be utilized. For activities included in work added and/or changed within an Order-On-Contract, the appropriate “Added/Changed Work” code shall be utilized. For all work activities performed by the Design-Builder or subcontractors/fabricators/suppliers, “Contactor” shall be designated as the Responsible Party. If the Design-Builder wants a separate activity code to enable sorting the activities of subcontractors, fabricators, or suppliers a separate “Subcontractor” code shall be utilized.

xix) **Interim Milestone Completion Dates with Liquidated Damages and Special Time-Related Contract Provisions** (i.e. – Incentive/Disincentive provisions, Lane Rental) – Each time-related contract provision in the Contract shall be represented in the Progress Schedule by having a start and finish milestone, with appropriate predecessors and successors assigned to all Schedule activities considered part of that time-related contract provision work including the start and finish milestone activities. The Start milestone for the time-related Contract work shall have predecessors and/or date constraints assigned that include those defined in the Contract documents, and the Finish milestone for the time-related Contract work shall have successors and/or date constraints assigned that include those defined in the Contract documents. All Schedule activities associated with each specific time-related contract provision shall be assigned to a separate node within the project WBS and the WBS node description shall be labeled accordingly, in addition these activities shall be assigned the appropriate Time-Related Clauses (DOT GLOBAL)

activity code value. A Level Of Effort activity shall be used for each time related contract provision (i.e - “Incentive 1 Duration” or “B Clock 1 Duration”), this activity shall have the Start Milestone as a predecessor with a SS relationship and the Finish Milestone as a successor with a FF relationship and the duration of this activity shall be calculated when the project is scheduled.

xx) **Baseline Narrative** - Include a narrative in Microsoft Word and/or Adobe Acrobat format that includes the following topics and attachments:

- **Contract Identification.** Include the contract D number, project name, project location, and name of the Design-Builder.
- **Key milestone dates.** Include the actual Contract Award Date, original and adjusted Project Completion Date, Substantial Completion Date, and anticipated completion of all Project Work. Also include any contract Interim Milestone dates (I/D, B-Clock, LD, etc), and scheduled Start and Finish dates for those Milestone activities.
- **General approach.** Describe the Design-Builder’s general approach to construct the Work outlined in the baseline schedule. Address the reasons for the sequencing of work and describe any resource limitations, potential conflicts, and other salient items that may affect the schedule and how they may be resolved.
- **Key Plan**s. If not provided in the Contract plans, or if modified by the Design-Builder, provide copies of the appropriate Contract plan sheets marked up to correlate values on the Contract plans (for Area of Work, Stage of Work, and WZTC Phase) to the Design-Builder’s planned breakdown of the project (ie- Activity Codes, Activity Descriptions) for scheduling purposes.
- **Logic Justifications.** The justification(s) for each activity with a duration exceeding 15 working days. The justification(s) for Design-Builder imposed activity constraints proposed in the schedule. The reason for any lags assigned to any activities.
- **Calendars.** Include a list of calendars which have been incorporated in the Schedule, and for each calendar the general reason for its use in the Schedule.
- **Critical Path issues.** A brief discussion of the critical path shown in Appendix 2, highlighting any potential challenges that are foreseen associated with the critical path work.
- **Coordination issues.** Outline any anticipated coordination issues related to work activities by other entities that require additional information from, or action by, the Department’s Project Manager.
- **APPENDIX 1 – Scheduling/Leveling Report.** This appendix in Adobe Acrobat PDF file format, formatted to fit standard ANSI Size A (Letter) size paper (8.5 inch x 12 inch) (215 mm x 279 mm) paper, printed with portrait orientation, shall be included with the narrative as a separate file.

  A complete Scheduling/Leveling Report (SCHEDLOG.TXT file generated by the Department’s Oracle-Primavera scheduling software application) which includes the Schedule Settings, Statistics, Errors, Warnings, Scheduling/Leveling Results, Exceptions, Activities with unsatisfied constraints, Activities with unsatisfied relationships, and Activities with external dates. The statistics shall include, # of Activities, # of Activities Not Started, # of Activities In Progress, # of Activities Completed, # of Activity Relationships, and # of Activities with Constraints. Total

number of activities on the critical path, percent complete, activities without predecessors, activities without successors, and activities out of sequence.

- **APPENDIX 2 – Progress Schedule plot.** This appendix in Adobe Acrobat PDF file format, formatted to fit ANSI Size B (Ledger) paper (11 inch x 17 inch) (279 mm x 431 mm) paper, printed with Landscape orientation, shall be included with the narrative as a separate file.

  Appendix 2 to the narrative shall be an electronic schedule plot (Adobe Acrobat format) using the Global Layout named "Baseline Schedule submission", with activities sorted by Start Date in ascending order, Grouping of activities by WBS, and only the "Longest Path" filter applied. This plot shall provide a clear critical path from the Data Date to the last activity in the schedule. Graphical representations shall be shown at a suitable scale to be legible and readable.

xxi) **List of Submittals –** The Design-Builder shall submit with the Progress Schedule a list of all Submittals (i.e. – design plans, project specification, shop drawings, required permits, erection/demolition plans, Heath and Safety Plan, Reference Part 3, Section 2.3, etc.) generated from the Baseline Progress Schedule for review and acceptance by the Department's Project Manager. The Design-Builder shall use a Filter to limit the schedule activities shown in the report to only the prepare/submit, and review/approve activities related to submittals. The report shall be in Adobe PDF format and transmitted to the Project Manager by email. This list shall be revised and updated monthly with each schedule submission.

e) Schedule Submission

i) Within the timeframe indicated in Table 2 column 1, submit one electronic copy of the Baseline Progress Schedule in a Critical Path Method (CPM) format for the Department Project Manager's review and acceptance.

TABLE 2 (IN WORK DAYS)

Timeframe from receipt of Notice of Award to Submission of complete Baseline Schedule. (Column 1)	Timeframe for Department Project Manager's Review (Column 2)	Timeframe from Notice of Award to acceptance by the Department's Project Manager not to exceed (Column 3)
10	10	40

ii) The Department's Project Manager will review the schedule and return it, accept it with comments, or reject it within the timeframes indicated in Table 2 column 2, following the date of receipt of the Design-Builder's submission.

iii) If the schedule is returned with comments, the Design-Builder shall address all comments and revise the schedule as necessary. The Design-Builder shall complete the Final Baseline Progress Schedule and obtain the acceptance of the Department's Project Manager within the timeframe required in Table 2 column 3.

iv) If the schedule is accepted by the Department's Project Manager without any comments, the Design-Builder shall copy the schedule and rename it for submission as the Final Baseline Progress Schedule.

v) In no way does the Baseline Progress Schedule modify the Contract documents.

vi) The Design-Builder shall assign appropriate Activity Codes and provide custom Layouts, Filters, and/or report formats necessary to allow the Project Manager to generate a report from the each Progress Schedule submission of all submittals required under the Contract (i.e., shop drawings, required permits, erection/demolition plans, etc). The list shall show scheduled submission date, review date, and acceptance date for each submittal and identify the earliest activity affected by each of these submittals. This list shall be generated from each Progress Schedule submission until all such activities are completed.

3.3.4.3 **Final Baseline Progress Schedule**

a) If the Baseline Progress Schedule is returned to the Design-Builder with comments, the Design-Builder shall make a copy of the schedule and rename it as the Final Baseline Progress Schedule with comments addressed and revisions made as necessary. The Design-Builder shall complete the Final Baseline Progress Schedule and obtain acceptance of the Department's Project Manager within the timeframe required in column 3 of Table 2, or within one week of the Design-Builder's receipt of the final comments by the Department's Project Manager, whichever is sooner.

b) The Department's Project Manager will review the schedule and return it, accepted or with comments, within 5 Work days following the date of receipt of the Design-Builder's submission.

c) The Final Baseline Progress Schedule must be "accepted" or "accepted as noted" by the Department's Project Manager prior to the Department evaluating any Design-Builder disputes associated with time impacts. This does not preclude the Design-Builder from submitting a dispute while the schedule is being reviewed for acceptance.

3.3.4.4 **Monthly Progress Schedule Submissions.**

a) First Monthly Progress Schedule Submission – Within three Work Days following acceptance of the Final Baseline Progress Schedule or the closing date for the first month's contract payment period whichever is later, the Design-Builder shall perform a Progress Schedule Update to reflect the status of all activities where work was performed in the time period between the start of work and acceptance of the Final Baseline Progress Schedule. This shall include actual dates entered in the Actual Start and Actual Finish columns, and Remaining Duration for activities where work has commenced but has not been completed, in addition the Design-Builder shall incorporate any Progress Schedule Revisions that reflect any changes in how future work activities are to be completed.

b) Subsequent Monthly Progress Schedule Submissions - On a monthly basis, the Design-Builder shall submit a copy of the current Progress Schedule that includes all Progress Schedule Revisions and Progress Schedule Updates to reflect the actual and planned prosecution and progress of the contract work. Progress Schedule Updates shall reflect the status of activities that have commenced or have been completed, including the following items: (a) actual dates in activity Actual Start and Actual Finish columns as appropriate; (b) actual Remaining Duration for activities commenced and not complete; and (c) actual activity Suspend or Resume dates for activities commenced and not complete. Progress Schedule Revisions reflect modifications made to activities in the current project baseline schedule in any of the following items: (a) activity Original Duration; (b) changes in logic connections between activities; (c) changes in Constraints; (d) changes to Activity Descriptions; (e) activity additions or deletions; (f)

changes in Activity Code assignments; (g) changes in Calendar assignments, (h) Productivity Rates. All "Out of Sequence" activities noted in the scheduling log shall be corrected to reflect the current construction operations.

When preparing a formal submission of the Progress Schedule, the Design-Builder shall make a copy of the current Progress Schedule and name it according to the file naming convention provided by the Department in Table 1.

c) Additional Schedule Requirements - In addition to the schedule requirements detailed for the submission of the Baseline Progress Schedule, the following shall be provided by the Design-Builder:

i) Data Date - the “Data Date” shall be the date the Project Scheduler last edits the schedule prior to submission to the Department’s Project Manager (generally the last day of the month). The Project Scheduler shall enter the Data Date through the Schedule (F9) tool.

ii) Activity Status Tab -

a. Durations – the Original Duration shall not be changed without prior written justification by the Design-Builder, and written approval by the Department’s Project Manager. The Design-Builder shall edit the Remaining Duration to reflect progress made on work activities, and shall not use Duration %. If a proposed change to Original Duration is due to additional or changed work to the contract the Design-Builder shall instead add an activity to reflect this additional work, and assign the appropriate Activity Code. The Design-Builder shall not use zero durations for Task Dependent activities.

b. Started and Finished dates – for each activity where work was begun during the month, the Design-Builder shall check the box adjacent to Started and enter the date the work began. For each activity where work was completed during the month, the Design-Builder shall check the box adjacent to Finished and enter the date the work was completed.

c. Suspended work – The first time that work has been suspended on a schedule activity, the Design-Builder shall enter the Suspend and Resume fields within the Project Details under the Status tab. For any subsequent suspensions of work to that activity the Design-Builder shall break that activity into two or more activities to accurately reflect the suspension and resumption of work dates in the field, and to more accurately reflect the relationship to other work activities.

iii) Calendars – To change a Project calendar for activities scheduled in the future, the Design-Builder shall copy the calendar and use a revised name that includes a reference to which Monthly Update the change was incorporated (i.e. - D260000 - Concrete Calendar should be revised to D260000 – 2 - Concrete Calendar to reflect the 2nd Monthly Update when the change was made to the calendar). The reason for the change in the calendar shall be documented in the Narrative.

iv) Notebook Tab –

a. Delays - For any activities on the critical path that are delayed during this monthly reporting period, the Design-Builder shall enter the dates the activity was delayed and the reason for such delay in the Notebook tab of that activity.

b. Activity Changes – For any changes to activity logic, calendar assignments, suspended work, added or revised lag periods or constraints the Design-Builder shall document the change and reason in a Notebook Topic for that activity by assigning the appropriate "Progress Submission # Revision" and describing the changes.

v) Production Rates – For any activities where the work to be performed is similar in nature to work already performed on the same Project and that the Production Rate for the work to be performed is different than the actual Production Rate for work already performed, the Department's Project Manager may require the Design-Builder to adjust the Duration for the work to be performed to reflect the more appropriate Production Rate.

vi) Deleted work – If work has been deleted the corresponding work activities in the schedule shall be deleted. The Design-Builder shall not just zero the activity duration since the calendar assigned to the zero duration activity shall still affect the logic of future work activities.

d) Monthly Progress Schedule Narrative - For each Monthly Progress Schedule submission, the Design-Builder shall submit a narrative in Microsoft Word, or Adobe Acrobat format that includes, but is not limited to the topics from the Baseline Narrative and the additional topics below:

i) **Project Progress.** Discuss the progress that was made during the current reporting period, and document any Total Float gained or recovered during the period. For major work items describe the differences between the actual work performed and the work planned for the period as represented in the preceding Progress Schedule submission, including explanations for the deviations.

ii) **Suspended Work.** For all suspended work activities that could otherwise logically be progressed, identify the responsible party prohibiting the progression of the work, as well as the detailed reasons why.

iii) **Project Delays.** Discuss any delays experienced during the current reporting period. Quantify any relative change in Total Float for the project since the last Progress Schedule submission. For each activity on the critical path (include Activity ID's and Activity Descriptions) where work was delayed during the reporting period, provide the following detailed information including:

- the extent in days (negative float) of the delay, and events that caused the delay.
- the party(s) responsible for the delay event(s).
- the other activities in the construction schedule affected by the events.
- the reasonable steps needed to minimize the impact of the delay, and which party needs to take the action(s).

The Design-Builder is reminded of the requirements of Notice & Recordkeeping as found in DB Section 104-06 as it relates to Disputed Work. The Design-Builder shall include a copy of any notice provided to the Project Manager for any time-related delay dispute as part of their narrative.

iv) **Project Issues.** List any other problems experienced during this Progress Schedule submission period, the party responsible for the problems, and the Design-Builder's

intentions to resolve the issue(s).List all activities for procurement of long lead time materials that are behind schedule and the reason(s) why.

v) **Schedule changes.**

- List of all added or deleted activities included in this Progress Schedule submission, and the reason(s) for and the impact(s) of such changes.
- List all changes in activity Original Durations, the justification for such change(s), and the impact(s) of such changes.
- List all changes in relationships between activities included in this Progress Schedule submission, and the reason(s) for and the impact(s) of such changes.
- List any addition or deletion of activity or project constraints, and the reason(s) for and the impact(s) of such changes.
- List all changes to the project calendars, and the reason(s) for and the impact(s) of such changes.

vi) List all activities for procurement of long lead time materials that are behind schedule and the reason(s) why.

vii) For major work items describe the differences between the actual work performed and the work planned for the period as represented in the preceding Progress Schedule submission, including explanations for the deviations.

viii) Description of any changes to the critical path since the last Monthly Progress Schedule submission and the impacts of such changes.

ix) The major work elements, as defined in the WBS, to be accomplished during the next monthly work period.

x) Any potential problems that are anticipated for the next monthly work period and the proposed solutions to such problems. Identify potential problems or risks that either the Department or Design-Builder may be potentially responsible for. Explain what action the responsible party (i.e. - Department or Design-Builder) needs to take and the date by which time the action needs to be taken to avoid the problem.

xi) Any planned acceleration of activities that the Design-Builder anticipates to undertake within the next monthly work period that either the Department directed, or that the Design-Builder believes is necessary.

xii) The following appendix in Adobe Acrobat PDF file format, formatted to fit ANSI Size E paper (34 inch x 44 inch) (863 mm x 1117 mm) paper, printed with Landscape orientation, shall be included with the narrative as a separate file.

- APPENDIX 1 – A listing of all work activities as of the Data Date, using the NYSDOT Appendix 1 activity layout, sorted by Finish date, Total Float in increasing order, showing the Activity ID, Activity Name, Original Duration, Remaining Duration, Actual Duration, Total Float, Early Start date, Start date, Finish date, Late Finish date, and Calendar ID. The grouping of activities shall be by WBS. The Gantt Chart shall clearly indicate all activities in the schedule. Graphical representations shall be shown at a suitable scale to be legible and readable.

xiii) The following appendix in Adobe Acrobat PDF file format, formatted to fit ANSI Size B (Ledger) paper (11 inch x 17 inch) (279 mm x 431 mm) paper, printed with Landscape orientation, shall be included with the narrative as separate files.

- APPENDIX 2 – A listing of all work activities as of the Data Date, using the NYSDOT Appendix 1 activity layout, sorted by Finish date, Total Float in increasing order, showing the Activity ID, Activity Name, Original Duration, Total Float, Start date, Finish date. There shall be no Grouping of activities, and the global Filter for Longest Path shall be applied. The Gantt Chart shall clearly indicate the project critical (longest) path, with logic lines. Graphical representations shall be shown at a suitable scale to be legible and readable.

xiv) The following appendix in Adobe Acrobat PDF file format, formatted to fit standard ANSI A (Letter) size paper (8.5 inch x 12 inch) (215 mm x 279 mm) paper, printed with portrait orientation, shall be included with the narrative as a separate file.

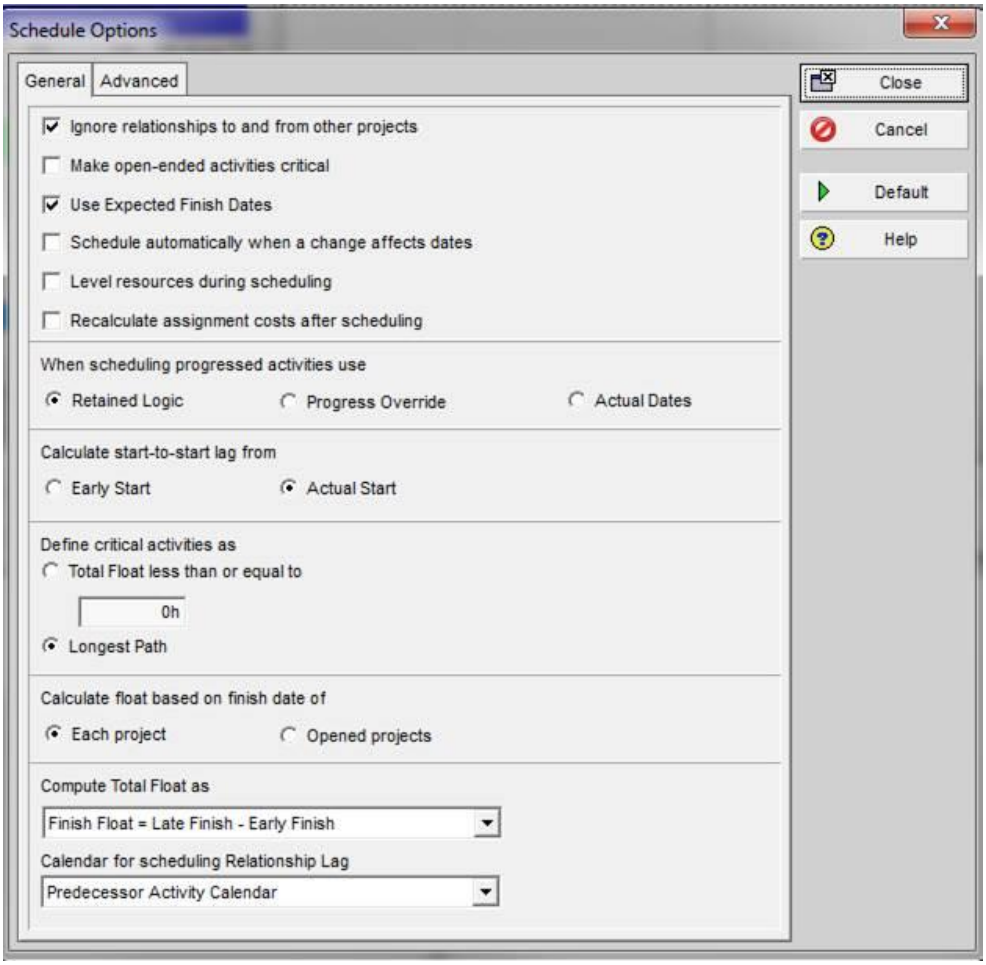
- APPENDIX 3 – A complete Scheduling/Leveling Report file generated by the Department's Primavera scheduling software application which includes the Schedule Settings, Statistics, Errors, Warnings, Scheduling/Leveling Results, Exceptions, Activities with unsatisfied constraints, Activities with unsatisfied relationships, and Activities with external dates. The statistics shall include, # of Activities, # of Activities Not Started, # of Activities In Progress, # of Activities Completed, # of Activity Relationships, and # of Activities with Constraints. Total number of activities on the critical path, percent complete, activities without predecessors, activities without successors, and activities out of sequence.

e) For any contract time extension requests the Design-Builder shall include: a Time Impact Analysis (TIA) for any changes to the schedule for future work for such issues as Added Work, VECP, or Changed Conditions; and a Delay Analysis that documents all delays from the Contract Award to the current date that is based on critical path delays that occurred when comparing subsequent Monthly Progress Schedule submissions and the supporting delay documentation in the Monthly Schedule Narratives.

f) Schedule Submission - The Design-Builder shall submit the Monthly Progress Schedule to the Department's Project Manager at the end of each month. The schedule submission to the Department's Project Manager shall be made within three (3) Work Days of the Data Date (last day of the month), whether or not the Department's Project Manager has accepted the previous Monthly Progress Schedule submission. Schedule submittals will only be considered complete when all documents and data have been provided.

Immediately prior to submitting the schedule the Project Scheduler shall "Schedule" the project, when scheduling the project the Scheduling Options shown in Figure 3 shall be used unless approval to vary from these settings is given by the Department's Project Manager. The Project Scheduler shall use the same Scheduling Options for all Progress Schedule submittals for the duration of the contract, unless directed otherwise by the Department's Project Manager.

FIGURE 3



g) Schedule Submission Method - The Design-Builder shall submit the schedule to the Department's Project Manager electronically for review and acceptance. The filename shall conform to the requirements of Table 1. The Project Scheduler can change the Project ID and Name through the WBS at the top node, as they do not have privileges to edit data through the Project Details tab. The Design-Builder's submission shall be documented by an E-mail to the Department's Project Manager, with a copy to CPMSchedulingSection@dot.state.ny.us and all appropriate project participants, that the project schedule on the network is ready for review. The Design-Builder's E-mail to the Department's Project Manager shall also consist of the following:

i) The subject of the E-mail shall include the Region #, contract D number, the Project Name, the Progress Schedule's ProjectID, and Design-Builder company name. (i.e. – Region 8, D260000, Rehabilitation of Main Street viaduct, D260000-1UD2, ABC Contractors)

ii) The E-mail message shall include the name of the Department's Project Manager, the current anticipated Finish date of the last activity in the Project Schedule, a statement as to how that date compares to the current Project Completion Date, and the name of the Department's Area Construction Supervisor (May be CQAE).

iii) Electronic files of all Narrative Reports and required attachments associated with the schedule shall be submitted by the Design-Builder in Adobe Acrobat format.

3.3.4.5 As-Built Progress Schedule

The Design-Builder shall submit the As-Built Progress Schedule with Actual Start and Actual Finish dates for all activities, within ten (10) Work Days following final acceptance of work by the Department.

3.3.5 Progress Schedule Review and Analysis

3.3.5.1 Immediate Rejection of Progress Schedule Submissions.

The following deficiencies in a Design-Builder's Progress Schedule submission shall be grounds for the immediate rejection by the Department's Project Manager, without further review, analysis and/or comments.

a) Failure of the Project Scheduler to "schedule" the Project, as of the Data Date.

b) Failure to attach a copy of the complete Scheduling/Leveling Report (SCHEDLOG.TXT file generated by Primavera software application).

c) Any activities without predecessors, or activities without successors, appearing in the Scheduling/Leveling Report with the exception of the first and last activity in the schedule.

d) Any activity constraints appearing in the Scheduling/Leveling Report that have not been approved in writing by the EIC, or that are not specifically allowed by this Special Provision.

e) Any Activities with Actual Dates > Data Date appearing in the Scheduling/Leveling Report.

f) Any Milestone Activities with invalid relationships appearing in the Scheduling/Leveling Report.

g) Failure to have a clearly defined Critical Path from the Data Date to the last activity in the schedule, using the Longest Path method. This would reflect logic errors in the project schedule.

h) Failure to attach the schedule Narrative and required appendices.

i) Failure to correct any "Out-Of-Sequence" activities that affect the critical path.

If any of these deficiencies are found, the Design-Builder's submission shall be considered deficient, and the Department's Project Manager will notify the Design-Builder immediately by return E-mail of the rejection of the schedule submittal.

3.3.5.2 **Schedule Analysis Method.**

Events, actions, and progress that cause delays or gains to the Progress Schedule will be analyzed solely by the "Contemporaneous Period Analysis" method.

3.3.5.3 **Project Progress Meetings**

One topic of the regular weekly progress meetings held by the Project Manager and attended by the Design-Builder shall be a review of the Weekly Status Report generated from the Progress Schedule. The Design-Builder shall be represented by their design, construction and Project Scheduler personnel. The Project Scheduler shall bring a copy of the printed plot of the current Weekly Status Report to the progress meeting.

a) The review of the Status Report serves as the forum to discuss project progress and delays, suggested remedies, necessary Progress Schedule revisions, coordination requirements, change orders, potential Design-Builder time extension requests, and other relevant issues. If contract work is falling behind the Progress Schedule, the responsible party (i.e.- Design-Builder or Department) shall be ready to discuss what measures it will take in the next thirty (30) days to put the work back on schedule so as to meet the Project Completion Date specified in the Contract.

b) Items of discussion will include, but are not limited to: project progress; schedule progress; near term and long-term schedule issues, including RFIs, Shop Drawing submittals, permit work, utility relocations, mitigation work; project issues and risks; proposed solutions; and any relevant technical issues that are schedule related.

c) At the meeting the Project Scheduler shall compile an action item list that describes who is responsible for existing or pending issues and the date by which the issue needs to be resolved to avoid delays. The Design-Builder shall forward a copy of the action item list to the Project Manager within 2 business days following the meeting.

3.3.5.4 **Department Review and Acceptance of Progress Schedules**

The Department's Project Manager will review the Monthly Progress Schedule submissions and will prepare a written response (Progress Schedule Review Report) to the Design-Builder's submission within five (5) Work Days following receipt of the Design-Builder's complete schedule submission. The Department's Project Manager will either "accept" the schedule, "accept as noted", or "reject" the schedule for re-submittal by the Design-Builder.

If the Progress Schedule submission is not in compliance with contract requirements, the Department's Project Manager may reject the submittal and shall forward any comments and requests for schedule revisions to the Design-Builder. The Design-Builder shall address all comments in writing and/or make the requested revisions, and resubmit the revised schedule within three (3) Work days of the Department Project Manager's reply. If the Department's Project Manager determines the revised submission still does not meet the contract requirements, any further revisions required thereafter shall also be submitted for acceptance within (3) Work days of the request for revisions by the Department's Project Manager.

For schedules that are “accepted as noted” the Department’s Project Manager shall forward any comments, or requests for revisions, to the Design-Builder. The Design-Builder shall address all comments in writing and/or make the requested revisions as part of the next scheduled Progress Schedule submission.

The Design-Builder shall make adjustments to the Progress Schedule in accordance with the comments from the Department’s Project Manager and resubmit copies for review consistent with the requirements of this section.

The Department’s Project Manager, by accepting the Progress Schedule, does not agree that the Progress Schedule is reasonable or that by following the Progress Schedule the Design-Builder can complete the Work in a timely manner. If, after a Progress Schedule has been accepted by the Department’s Project Manager, either the Design-Builder or the Department’s Project Manager discover that any aspect of the Schedule is in error, or something significant has been omitted, the Design-Builder shall correct the Progress Schedule in the next Progress Schedule submission and describe this revision in the Narrative report.

Acceptance of Progress Schedules by the Department’s Project Manager shall not be construed to imply approval of any particular construction methods or sequence of construction or to relieve the Design-Builder from its responsibility to provide sufficient materials, equipment and labor to guarantee the completion of the Contract in accordance with the Contract requirement.

Acceptance of the Progress Schedule by the Project Manager does not attest to the validity of assumptions, activities, relationships, sequences, resource allocations, or any other aspect of the progress schedule. Within the contractual constraints, the Design-Builder is solely responsible for the planning and execution of the work.

Acceptance of the Progress Schedule by the Department’s Project Manager shall not be construed to modify or amend the Contract Agreement or the date of Project Completion therein. Completion dates can only be modified or amended by standard contractual means, through an official HC-250b Request For Extension of Completion Date.

If any resources are included in the Progress Schedule, it is not intended that the Department’s Project Manager, by accepting the schedule should use the Design-Builder’s resource data for anything other than determining the reasonableness of achieving the Design-Builder’s production rates.

Once the Progress Schedule has been accepted, the Design-Builder shall not deviate from it without first notifying the Department’s Project Manager in writing.

Upon receipt from the Design-Builder of the corrected schedule, a new review period by the Department’s Project Manager of five (5) Work days will begin.

3.3.6 Changes to Progress Schedule due to Added/Deleted/Changed Work:

3.3.6.1 Changes to the Contract

In the event a notice of a change to the Contract is received, the appropriate changes to the progress schedule shall be made, as necessary, to incorporate the anticipated added/deleted/changed work and the Design-Builder shall notify the Department’s Project Manager in writing within 10 (ten) calendar days if there is any effect of such change to the

schedule. The reasons for these revisions must be succinct, comprehensive, and factual to merit consideration. Change to the contract includes, but is not limited to, Extra Work, Agreed Prices, Change Orders, Suspensions of Work Directed by the Department's Project Manager, Changed Condition, and Value Engineering Change Proposals. Added, deleted and/or extra work associated with Change Orders shall be reflected in the next Monthly Progress Schedule Submission in anticipation of and prior to the date in which the work physically takes place without regard to the dates when the actual Change Order was approved. The effect of the change to the Contract on the projects Critical Path shall be stated. Extra work or additional work that does not affect the controlling operation on the critical path will not be considered as the basis for a time extension. All schedule activities effected by added, deleted or changed work that is included in a signed Change Order, Field Change Order, or Authorization of Extra Work (with the exception of minor quantity changes that do not impact contract milestones), or work activities performed by the Design-Builder at risk in anticipation of such Department approval, shall be assigned the appropriate Activity Code (Added/Changed Work) and Code Value (sequentially numbered) to denote which "Changed Contract Work" order number correlates to those activities of work.

3.3.6.2 **Time Impact Analysis**

For each request of an adjustment of Contract time due to an anticipated change to future work in the Progress Schedule, when the Design-Builder or Department's Project Manager consider that an anticipated or approved change to the Contract may impact the critical path and Contract progress by more than a calendar month, the Design-Builder shall submit a Time Impact Analysis (TIA). The TIA shall be submitted as part of any Order on Contract (Change Order) and/or VECP if the critical path changes by more than a calendar month.

The TIA shall be based on a revised Progress Schedule and shall be submitted as an electronic file (using Microsoft Word for the narrative) containing:

a) The TIA shall illustrate the impacts of each change or delay on the current scheduled completion date or internal milestone, as appropriate.

b) The analysis shall use the accepted Monthly Progress Schedule that has a data date closest to and prior to the event as the "Current Baseline", this shall then be compared against the "What-if Project Plan Baseline" for the purpose of the TIA.

c) If the Department's Project Manager determines that the accepted schedule used does not appropriately represent the conditions prior to the event, the accepted schedule shall be updated to the day before the event being analyzed.

d) The TIA shall include an impacted schedule ("What-if Project Plan Baseline") developed from incorporating the actual or anticipated event into the accepted schedule by adding or deleting activities, or by changing durations or logic of existing activities.

e) If the impact schedule shows that incorporating the event negatively modifies the critical path and scheduled completion date of the accepted schedule, and the Project Manager accepts the impacted schedule, the difference between scheduled completion dates of the two schedules shall be equal to the proposed adjustment of contract time.

f) The Department's Project Manager may construct and utilize an appropriate project schedule or use another recognized method to determine adjustments in contract

time until the Design-Builder provides the TIA.

g) The Design-Builder shall submit a TIA within fifteen (15) Work Days of receiving a written request for a TIA from the Department's Project Manager.

h) The Design-Builder shall allow the Project Manager ten (10) Work Days after receipt to accept or reject the submitted TIA. All accepted TIA schedule changes shall be included in the next Monthly Progress Schedule submission.

i) If a TIA submitted by the Design-Builder is rejected by the Department's Project Manager, the Design-Builder shall meet with the Project Manager to discuss and resolve issues related to the TIA. If agreement is not reached, the Design-Builder will give notice in conformance with §104-06, Notices and Recordkeeping, and submit in accordance within the provisions in §105-14, Required Content of Dispute Submission.

j) The Design-Builder shall only show actual as-built work, not unapproved changes related to the TIA, in subsequent Monthly Progress Schedule submissions. If agreement is reached at a later date, approved TIA schedule changes shall be included in the next Monthly Progress Schedule submission.

k) Request for a contract time extension will not be processed until the receipt and approval of a Time Impact Analysis.

3.3.7 Failure to Submit Progress Schedules and/or Recovery Schedules

If the Design-Builder fails to comply with the provisions of this Special Provision, the Department's Project Manager may suspend payment for any Contract Work.

1) If the Design-Builder's Progress Schedule submission is rejected due to any deficiency noted in paragraph 5.3.5.1(a) through (i), it shall be considered an incomplete submission and therefore substantially deficient.

2) If the Design-Builder's revised Progress Schedule submission does not address the written comments provided by the Department's Project Manager, and does not include a written explanation with a reasonable rational for not addressing those comments, the submission shall be considered deficient.

3.3.8 Recovery Schedule

1) If the latest completion time for any work on the current Progress Schedule results in an activity being delayed ten percent or more of the time beyond the required Contract duration or any specified Milestone duration, as adjusted if appropriate, the Project Manager may require the Design-Builder to submit a Recovery Schedule and written description of the plan to recover all lost time and maintain the required Completion Date or specified Interim Milestone Date(s).

2) With the Recovery Schedule the Design-Builder shall include revised calendars, activity Production Rates, and/or revised activity logic along with a narrative that identifies how time will be recovered.

   The submission may be supplemented with a request for a Contract Time Extension. The Design-Builder shall provide a reasonable plan for accomplishing the work of the contract within the current completion date, or to the requested contract extension date. The Department's Project Manager will use the Recovery Schedule to evaluate time

extensions, with or without charges.

3.3.9 Float

During the course of contract execution, Total Float generated due to the efficiencies of either party (State or Design-Builder) will be considered project Float that is not for the sole use of the party generating the float; rather it is a shared commodity to be reasonably used by either party. Any party assigned activity responsibility within the schedule has the full use of the project Float until it is depleted.

3.3.10 Progress Schedule Updates and Weekly Status Reports:

1) The Design-Builder shall perform a Progress Schedule Update on a minimum of a weekly basis, and every fourth schedule update period shall be consistent with a monthly contract payment period. Weekly updates showing work completed shall commence within 3 weeks of Notice to Proceed. Weekly updates shall be provided the day before progress meetings. Weekly updates will be required even if the Base Line is not accepted.
2) The Design-Builder shall generate a Weekly Status Report after performing the Progress Schedule Update and Scheduling the project with a Data Date of the day the schedule was updated, and submit it to the Project Manager within one (1) Work Day of the Data Date for that update period. The Weekly Status Report shall be generated using the activity layout named Weekly Status Report. The Gantt Chart shall clearly indicate the project critical (longest) path. Graphical representations shall be shown at a suitable scale to be legible and readable.
3) During any time periods within the contract that special time-related contract provisions are in effect, including Incentive/Disincentive Periods, the Project Manager may require more frequent Progress Schedule Updates and/or Progress Schedule Status Reports.

3.4 PROGRESS CHECK POINTS AND PAYMENT

Specified schedule submittals and schedule updates shall be considered Progress Check Points.

The cost of preparing and updating the CPM schedule and meeting all other requirements of this Special Provision shall be included the Project costs.

SP-4. MATERIALS APPROVAL PROCEDURES FOR DESIGN-BUILD PROJECTS

All Materials used in the Design-Build work shall meet the quality requirements described in the Contract Documents. The use of Standard Specifications and Approved List (AL) materials are expected for commonly available products for incorporation into the Work. Additionally, existing NYSDOT Special Specifications that include material requirements may also be used in the Work.

If the Design-Builder deviates from Contract Documents, Standard Specifications, or existing Special Specifications, the Design-Builder shall develop Design Plans, Project Specifications and Work Plans that define materials and procedures to complete the Work. The Design-Builder shall progress acceptance of materials and sources, proving durability through tests and evaluations as appropriate, prior to use in the Work. The Design-Builder shall document the

sources of supply (NOTE: Must be in compliance with all “Buy America” regulations) and kinds of materials that will be used in the work as soon as they are known.

As part of the Design requirements of Part 3, Section 5, the Department will review and accept materials proposed for use as follows:

Products that are not presently on the AL but claim to meet specification requirements shall be evaluated by the Department prior to use. The Department will perform the necessary testing according to the existing material requirements for the products as defined in Section 700 of the NYSDOT Standard Specifications or any Special Specification requirements. A request for inclusion on the AL shall be made by the manufacturer / supplier. The required submittal information for AL consideration can be found at:

https://www.dot.ny.gov/divisions/engineering/technical-services/materials-bureau/approved-list-submission

When products are proposed for which NYSDOT does not have Standard or Special Specifications, or where proven materials may be used in non-traditional applications, materials evaluations will be progressed based on review of technical details, performance histories, and/or physical testing. The Design-Builder will provide this information to prove the expected performance and durability of these unique materials before they can be used in the Work. Submissions shall include:

General Information

- Product Name
- General Description
- Purpose/Justification
- Manufacturer
- Supplier

Technical Details (Specifications)

- Materials (Include composition and MSDS sheets)
- Construction Details
- Testing, Inspection and Acceptance (identify standards like AASHTO, AREMA or ASTM)
- Maintenance requirements and frequencies that may apply for the intended application

Performance History

- Test Results (including test methods for durability, strength, appearance, etc)
- Previous Uses (describing who, where, when, documented performance)

The evaluation of materials will depend on the uniqueness of the proposed materials, critical nature of the application, and detailed information provided. Evaluations will consist of the following:

- Materials deemed less critical will likely be accepted based on literature review only. Use of these materials can begin at any time.

- Materials deemed more critical will require both literature review and physical testing by the Department. Physical testing will commence only after literature review determines the material has a likely chance of meeting all performance criteria defined in the Design-Builder's Special Specifications. Conditional acceptance will be made upon completion of the literature review that will allow use of these materials prior to completion of physical testing. However, failure of materials during physical testing will result in a NCR for any materials incorporated into the Work. Rectification of the generated NCR shall be at the sole judgement of the Department.

The Design-Builder shall consider the uniqueness of the proposed materials, critical nature of the application, and detail of information provided for an evaluation. Additionally, The Design-Builder shall consider the duration of the evaluation required to reasonably progress all sampling, transportation, preparation, testing, and evaluation of results as defined in the material requirements for an item and may NOT use any part of the evaluation process as a basis for claim and/or delay. The Department will, when possible, perform AASHTO, AREMA and/or ASTM tests of the materials for acceptance purposes. When the Department does not have the capabilities to evaluate materials, testing labs may be hired for testing as needed at the Design-Builder's expense.

Use of any materials prior to acceptance by the Department shall be at the Design-Builder's risk. After acceptance, materials shall conform to specification requirements and subject to all QC/QA actions and Department verification.

Once in Construction, the Design-Builder is responsible for QC of all materials while the Department is responsible to verify the quality of all materials through the timely submission of Certified Test Reports. The Department will progress sampling and testing for verification of materials according to the established Quality Control Plan developed for the project.

SP-5. SPECIAL PROVISIONS FOR TESTING BRIDGE BEARINGS

Throughout this Special Provision, references to the Standard Specification shall mean the edition of the NYSDOT Standard Specifications, Construction and Materials, English Units, Office of Engineering, in effect on the Proposal Due Date.

Inspection, sampling, and testing shall be in accordance with the procedures noted for each bearing type below with the Design-Builder assuming the role of the Department. Inspection shall be done at the place of manufacture after all bearings in a lot are completely fabricated. Sampling shall be done randomly from all bearings in each lot. Inspection, sampling, and testing shall be completed by inspectors independent of the manufacturer. In addition, the Department will inspect and sample for verification purposes after the Design-Builder completes their inspection and sampling. Bearings may be shipped to the project site after inspection and sampling is completed by the Design-Builder and the Department.

5.1 DISC-DESIGN STRUCTURAL BRIDGE BEARINGS

The Design-Builder shall perform the inspection, sampling and testing of disc-design structural bridge bearings, on a lot by lot basis, in accordance with the procedures outlined in Materials Procedure 84-2 (Quality Assurance Inspection for 716.06.01, Disc-Design Structural Bridge Bearings 716.07.01 Pot-Design Structural Bridge Bearings) [to be referred to as MP84-2]. The requirements for these bearings are listed in the Standard Specifications.

5.1.1 Polyether Urethane Structural Element

The physical properties of the polyether urethane shall conform to the requirements ASTM D2240, ASTM D412 and ASTM D395 as listed in Section 700 of the Standard Specifications.

5.1.2 Steel Plates

Conform to the requirements of the steel designated on the Contract Plans and applicable provisions of the NYS Steel Construction Manual (refer to Section 700 of the Standard Specifications).

5.1.3 Stainless Steel

Stainless steel shall conform to the requirements of ASTM A167 or ASTM A240, Type 304. Refer to Section 700 of the Standard Specifications.

5.1.4 Polytetrafluoroethylene (PTFE) Sheet and Strip

Finished PTFE sheet and strip shall conform to the physical requirements of ASTM D638M and ASTM D792 as listed in Section 700 of the Standard Specifications.

5.1.5 Welding Procedure

All welding shall conform to, and all welders shall be qualified in accordance with the requirements of the NYS Steel Construction Manual.

5.1.6 Compression Strain

Requirements and test conditions are outlined in Section 700 of the Standard Specifications.

5.1.7 Sliding Coefficient of Friction

For all guided and non-guided expansion type disc-design bearings, the bearing manufacturer will test one production bearing per lot (see Section 700 of the Standard Specifications).

5.1.8 Rotation Test

The bearing manufacturer will test one production bearing per lot. Evaluation criteria are listed in Section 700 of the Standard Specifications.

5.2 POT-DESIGN STRUCTURAL BRIDGE BEARINGS

The Design-Builder shall perform the inspection, sampling and testing of pot-design structural bridge bearings, on a lot by lot basis, in accordance with the procedures outlined in Materials Procedure 84-2 (Quality Assurance Inspection Procedure for 716.06.01 Disc-Design Structural

Bridge Bearings 716.07.01 Pot-Design Structural Bridge Bearings) [to be referred to as MP84-2]. The requirements for these bearings are listed in the Standard Specifications.

5.2.1 Elastomeric Rotational Element

The tensile properties of the neoprene and natural rubber elements shall conform to ASTM D412, ASTM D573 and ASTM D2240. These neoprene and natural rubber elements shall also conform to ASTM and AASHTO requirements as listed in Section 700 of the Standard Specifications [ASTM D2000, Line Call Out M2BC517A14B34, ASTM D2000, Line Call Out M4AA517A13B33, AASHTO Standard Specifications for Bridge Section 2.25.2, Materials 50 Durometer Hardness].

5.2.2 Steel

All steel will conform to the requirements of the steel designated on the Contract Plans and applicable provisions of the NYS Steel Construction Manual (refer to section 700 of the Standard Specifications).

5.2.3 Stainless Steel

Stainless steel shall conform to the requirements of ASTM A167 or ASTM A240, Type 304. Refer to Section 700 of the Standard Specifications.

5.2.4 Polytetrafluoroethylene (PTFE) Sheet and Strip

Finished PTFE sheet and strip shall conform to the physical requirements of ASTM D638M and D792 as listed in Section 700 of the Standard Specifications).

5.2.5 Welding Procedure

All welding shall conform to, and all welders shall be qualified in accordance with the requirements of the NYS Construction Manual.

5.2.6 Sliding Coefficient of Friction

For all guided and non-guided expansion type pot-design bearings, the bearing manufacturer will test one production bearing per lot (see Section 700 of the Standard Specifications).

5.2.7 Rotation Test

The bearing manufacturer will test one production bearing per lot. Evaluation criteria are listed in the Standard Specifications.

5.3 STEEL LAMINATED ELASTOMERIC BRIDGE BEARINGS AND ELASTOMERIC BRIDGE BEARINGS WITH EXTERNAL LOAD PLATES

The Design-Builder shall perform the inspection, sampling and testing of elastomeric bridge bearings, on a lot by lot basis, in accordance with the procedures outlined in Materials Method No.: NY 23 M (to be referred to as MM23). The requirements for these bearings are listed in the Standard Specifications.

5.3.1 Elastomeric Material

The physical properties of the cured elastomeric compound shall meet the requirements of ASTM D412 (see Section 700 of the Standard Specifications).

Manufacturer must certify that the elastomeric compound passes Grade 3 Low-Temperature Brittleness as determined by ASTM D746 – Brittleness Temperature of Plastics and Elastomers by Impact, Procedure B.

5.3.2 Internal Steel Plates (shims)

Conform to the requirements of ASTM A36M, ASTM 1008/A 1008/M or ASTM 1011/A 1011/M (Grade 33, 36 and 40).

5.3.3 External Load Bearing Plates and Steel Backing Plates

External load plates shall conform to the requirements of ASTM A36M and to the requirements of the Steel Construction Manual (SCM).

5.3.4 Welding Procedure

The bearing manufacturer shall submit a Welding Procedure to the Deputy Chief Engineer Structures (DCES) for each welding process to be used in the manufacture of the bearings. No welding shall be performed until the manufacturer receives an approved Welding Procedure.

5.3.5 Bearing Tolerances

The finished elastomeric bearings shall conform to the design dimensions, with the tolerances listed in Section 700 of the Standard Specifications.

5.3.6 Compression / Deflection

Test conditions are outlined in the Standard Specifications.

5.3.7 Adhesion

Visual inspection as outlined in the Standard Specifications.

SP-6. PAYMENT REDUCTIONS, LIQUIDATED DAMAGES AND EARLY COMPLETION BONUS

Time is an essential element of the Contract, and it is important that the Work be pursued vigorously to completion. The public is subject to detriment and inconvenience when full use of infrastructure cannot be maintained during the construction of the Project. Therefore, payment reductions and/or liquidated damages will be assessed against the Design-Builder under the circumstances specified below. Conversely, an early completion bonus will be paid to the Design-Builder for completing the Project before the Project Completion Date in accordance with the circumstances specified below.

6.1 PAYMENT REDUCTIONS AND LIQUIDATED DAMAGES

6.1.1 Project Completion

The Design-Builder shall pay liquidated damages, as described in DB § 108-03 – Liquidated Damages, and as shown on Form SCD, Table SCD-1, for failure to achieve Project Completion by the Project Completion Date. The Project Completion Date will be established based on the proposed duration provided in Table SCD-1 on Form SCD and described in Part 2 - DB 103-06 Sample Form of Contract Agreement, Article 4.2 Project Completion Date.

6.1.2 Interim Completion

The Interim Completion Milestone Date will be the date determined by adding the number of calendar days proposed by the Design-Builder on Form SCD (the Duration), to the date of the Notice to Proceed as issued by the Department. The Interim Completion Milestone Date may not be changed without written approval by the Department's Project Manager.

The Design-Builder shall be subject to liquidated damages for failure to meet the Interim Completion Milestone Date in accordance with Form SCD for each calendar day in excess of the total number of calendar days provided in the tables on Form SCD.

6.1.3 Impacts to Traffic

The Design-Builder shall be subject to payment reductions and liquidated damages for each calendar day that traffic is impacted, at each site, in excess of the number of Traffic Impact Days indicated in Table SCD-3 on Form SCD, and/or for each day that traffic is impacted in excess of the Traffic Impact Duration provided in Table SCD-3 on Form SCD. If both the number of Traffic Impact Days and the Traffic Impact Duration are exceeded at any given site, Liquidated Damages will be assessed twice each day both are exceeded.

6.2 EARLY COMPLETION BONUS

An Early Completion Bonus will be paid to the Design-Builder in the amount of $X,X00.00 per day (XX days maximum) for the number of days that all traffic is permanently transferred to its final configuration on ROADWAY(S), without any further lane restrictions on this/these structure(s), earlier than the Interim Completion Milestone Date. The Interim Completion Milestone Date will be established based on the proposed duration provided by the successful Proposer in Table SCD-2 on Form SCD and described in DB 103-06, Article 4.1 – Interim Completion Milestone Date.

In addition, an Early Completion Bonus will be paid to the Design-Builder in the amount of $X,X00.00 per day (XX days maximum) for the number of days Project Completion is achieved earlier than the Project Completion Date. The Project Completion Date will be established based on the proposed duration provided by the successful Proposer in Table SCD-1 on Form SCD and described in DB 103-06, Article 4.2 – Project Completion Date.

SP-7. CONSTRUCTION INSPECTION REQUIREMENTS

These guidelines shall be used to develop the Design-Builder's Quality Control (QC) Plan. The intent of notes #1 and #2 below are to establish a minimum requirement for assigning the number of CI staff on the project. It is not intended to serve as a limit to the maximum number of CI staff that may be necessary or required based on the

Design Builder's schedule, number of concurrent activities, or level of experience of the individual Construction Inspector(s) or other factors not described herein.

Construction Inspection QC Operations:

1. **Primary Shift**: The DB is required to furnish **no less than** 4 Full Time Construction Inspectors, FTCI, (not including the Resident Engineer or the Office Engineer). Upon commencement of the project (NTP), it is understood that the FTCIs will be logically increased to the inspection staff incrementally consistent with the project's schedule. The DB shall ensure adequate inspection staff is present on site, no less than two weeks prior to the need for the additional FTCI staff persons to allow for advance study and familiarization with the project. In any case, the 4 FTCI staff shall be on site for deployment no later than 180 calendar days from NTP. Subsequent to achieving the project substantial completion, as defined by the contract, the DB firm may similarly ramp down the inspection staff to align with the work remaining to complete the project and consistent with the project schedule, with the written approval of the Department's Project Manager. During project operations, the number of FTCI should be consistent with the Design Builder's planned operations and Table "Construction Inspection Requirements".
2. **Secondary or Multiple Shift:** In the event the DB elects to perform work in multiple shifts, then additional Construction Inspection staff must be added to the CI staffing requirement of note #1 above. However, at no time can there be less than 4 Full Time Construction Inspectors provided during any secondary or multiple shift time period.
3. **Additional Staffing Requirements:** The Design Builder is expected to balance the inspection needs with its schedule of simultaneous operations paying particular attention to the Continuous Inspection demands vs. the number of CI staff available. The accompanying table utilizes generic titles from the Standard Specification Table of Contents. Project specific situations may alter the requirements of an activity.
4. **Testing Requirements:** Material Testing Requirements are not incorporated into these guidelines. Refer to Part 3, Section 6, "Construction Quality Control and Quality Assurance".
5. **Witness and Hold Point** requirements represent activities that require an inspector to determine conformance based on an evaluation performed after specific milestone is accomplished. These witness and hold thresholds may be determined based on the specific progression of each activity hold points must be agreed upon between the CQCE and the CQAE prior to commencing the work.
6. **Interval Definitions:**
    1. Intermittent (1) - Inspection required is based on the item(s) of work and Contractor's means and methods
    2. Intermittent (2)-Inspection is required, at a minimum, on a daily basis
    3. Intermittent (3)-Inspection is required no less than twice per inspection shift.
    4. Continuous – Inspection is required continuously throughout the duration of the operation.
7. **Temporary Work:**

Prior to the commencement of temporary work, the CQCE and the CQAE in conjunction with the Resident Engineer and Department's PM shall discuss and reach concurrence on the inspection QC and QA requirements for the project and features defined to be of a temporary nature.

8. **Force Account Work:**

   There will be no consideration of additional payment for CI staff related to Force Account Work unless the minimum number of FTCI staff, as listed in Note 1 of this Special Provision, is exceeded.

CONSTRUCTION INSPECTION REQUIREMENTS			
SPECIFICATION SECTION	**INSPECTION INTERVAL / FREQUENCY**	**WITNESS & HOLD**	**COMMENTS**
SECTION 201 - CLEARING AND GRUBBING	Intermittent (1)		
SECTION 202 - DEMOLITION OF BUILDINGS AND STRUCTURES	Continuous		
SECTION 203 - EXCAVATION WITH BLASTING	Intermittent (1)	yes	continuous inspection for blast operations, intermittent for pre and post blast operations
SECTION 203 - EXCAVATION W/O BLASTING	Intermittent (3)		
SECTION 203 - EMBANKMENT	Intermittent (1)	Yes	completion of each lift
SECTION 204 - FLOWABLE FILL	Intermittent (1)		
SECTION 205 - CONTAMINATED SOIL	Continuous		
SECTION 206 - STRUCTURE EXCAVATION	Intermittent (1)	Yes	verify Line, grade accuracy
SECTION 206 - TRENCH AND CULVERT EXCAVATION	Continuous		*if backfill is included
SECTION 207 - GEOSYNTHETICS	Intermittent (1)		
SECTION 208 - STORMWATER MANAGEMENT FACILITIES	Intermittent (1)		
SECTION 209 - SOIL EROSION AND SEDIMENT CONTROL	Intermittent (1)		Plus Post storm for repairs and modifications
SECTION 210 - REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING MATERIAL (BUILDINGS, BRIDGES AND HIGHWAYS)	Intermittent (1)		
SECTION 211 - INTERNALLY STABILIZED CUT STRUCTURES	Continuous		
SECTION 212 - ROCK SLOPE REINFORCEMENT AND CATCHMENT SYSTEMS	Intermittent (1)		
SECTION 304 - SUBBASE COURSE	Intermittent (1)	Yes	proof rolling required, verify subgrade surface: line and grade quality
SECTION 307 - HYDRATED LIME STABILIZED SUBGRADE	Intermittent (1)		as needed
SECTION 402 - HOT MIX ASPHALT (HMA) PAVEMENTS	Continuous		

CONSTRUCTION INSPECTION REQUIREMENTS			
SPECIFICATION SECTION	**INSPECTION INTERVAL / FREQUENCY**	**WITNESS & HOLD**	**COMMENTS**
SECTION 405 - COLD MIX BITUMINOUS PAVEMENT (OPEN GRADED)	Continuous		
SECTION 407 - TACK COAT	Continuous		
SECTION 410 - CHIP SEAL	Continuous		
SECTION 412 - CRACK SEALING ASPHALT PAVEMENTS	Intermittent (1)	Yes	upon addition of new material to applicator
SECTION 413 - MICRO-SURFACING	Continuous		
SECTION 417 – HOT MIX ASPHALT USING RECYCLING TREATMENTS	Continuous		
SECTION 418 – ASPHALT PAVEMENT JOINT ADHESIVE	Intermittent (1)		
SECTION 419 - FOG SEAL	Intermittent (1)		
SECTION 420 - POROUS ASPHALT PAVEMENT	Continuous		
SECTION 490 - COLD MILLING	Intermittent (1)	Yes	verify grade and quality of surface
SECTION 502 - PORTLAND CEMENT CONCRETE PAVEMENT	Continuous		
SECTION 503 - PORTLAND CEMENT CONCRETE FOUNDATION FOR PAVEMENT	Intermittent (1)		
SECTION 551 - PILES AND PILE DRIVING EQUIPMENT	Continuous		
SECTION 552 - EXTERNALLY STABILIZED CUT STRUCTURES (SHEETING)	Continuous		
SECTION 553 - COFFERDAMS AND WATERWAY DIVERSION STRUCTURES	Continuous		
SECTION 554 - FILL TYPE RETAINING WALLS	Continuous		
SECTION 555 - STRUCTURAL CONCRETE	Continuous		
SECTION 556 - REINFORCING STEEL FOR CONCRETE STRUCTURES	Intermittent (2)	Yes	final inspection of rebar and forms prior to concrete placement
SECTION 557 - SUPERSTRUCTURE SLABS, SIDEWALKS ON BRIDGES, AND STRUCTURAL APPROACH SLABS	Continuous	Yes	daily Inspection and approval of all elements prior to concrete placement

CONSTRUCTION INSPECTION REQUIREMENTS			
SPECIFICATION SECTION	**INSPECTION INTERVAL / FREQUENCY**	**WITNESS & HOLD**	**COMMENTS**
SECTION 558 - LONGITUDINAL SAWCUT GROOVING OF STRUCTURAL SLAB SURFACE	Intermittent (1)	Yes	After first pass to confirm depth and spacing
SECTION 559 - PROTECTIVE COATINGS AND GRAFFITI REMOVAL	Intermittent (3)		
SECTION 560 - MASONRY	Intermittent (1)		
SECTION 562 - REINFORCED CONCRETE THREE-SIDED STRUCTURES	Continuous		
SECTION 563 - PRESTRESSED CONCRETE UNITS (STRUCTURAL)	Continuous		
SECTION 564 - STRUCTURAL STEEL	Continuous		
SECTION 565 - BRIDGE BEARINGS	Intermittent (1)	Yes	final survey/acceptance prior to structural steel placement
SECTION 566 - MODULAR EXPANSION JOINT SYSTEMS	Intermittent (1)	Yes	When joint is set
SECTION 567 - BRIDGE JOINT SYSTEMS	Intermittent (1)	Yes	When joint is set
SECTION 568 - BRIDGE RAILING	Intermittent (1)		
SECTION 569 - PERMANENT CONCRETE TRAFFIC BARRIER FOR STRUCTURES	Continuous		
SECTION 570 - PAINT REMOVAL OPERATIONS	Intermittent (3)	Yes	verification of paint removal
SECTION 571 - DISPOSAL OF PAINT REMOVAL WASTE	Intermittent (2)	Yes	Whether carrier is approved prior to loading
SECTION 573 - STRUCTURAL STEEL PAINTING: FIELD APPLIED - TOTAL REMOVAL	Intermittent (1)	Yes	verification of paint removal and inspection of each paint coat prior to next paint coat
SECTION 574 - STRUCTURAL STEEL PAINTING: OVERCOATING AND LOCALIZED	Intermittent (1)	Yes	
SECTION 576 - BRIDGE DRAINAGE SYSTEM	Intermittent (1)		verify final install quality
SECTION 578 - BONDED CONCRETE OVERLAY FOR STRUCTURAL SLABS	Continuous		

CONSTRUCTION INSPECTION REQUIREMENTS			
SPECIFICATION SECTION	**INSPECTION INTERVAL / FREQUENCY**	**WITNESS & HOLD**	**COMMENTS**
SECTION 579 - STRUCTURAL SLAB RECONSTRUCTION PREPARATION	Continuous		
SECTION 580 - REMOVAL OF STRUCTURAL CONCRETE	Intermittent (1)		
SECTION 581 - REMOVAL OF BRIDGE OVERLAYS	Intermittent (1)		
SECTION 582 - REMOVAL AND REPLACEMENT OF STRUCTURAL CONCRETE	Intermittent (1)	Yes	When competent concrete has been reached; prior to forming
SECTION 583 - SHOTCRETE	Continuous		
SECTION 584 - SPECIALIZED OVERLAYS FOR STRUCTURAL SLABS	Continuous		
SECTION 585 - STRUCTURAL LIFTING OPERATIONS	Continuous		
SECTION 586 - MISCELLANEOUS STRUCTURAL RECONSTRUCTION	Continuous		
SECTION 587 - BRIDGE RAILING RECONSTRUCTION	Intermittent (1)		
SECTION 588 - BRIDGE JOINT REHABILITATION	Continuous		
SECTION 589 - REMOVAL OF STRUCTURAL STEEL	Continuous		
SECTION 590 - ADJUSTMENT OF BRIDGE APPURTENANCES	Intermittent (1)		
SECTION 595 - WATERPROOFING SYSTEMS FOR STRUCTURES	Continuous		
SECTION 596 - OPEN STEEL FLOOR	Intermittent (1)		
SECTION 601 - ARCHITECTURAL PAVEMENTS AND TREATMENTS	Intermittent (1)		
SECTION 602 - REHABILITATION OF CULVERT AND STORM DRAIN PIPE	Continuous		
SECTION 603 - CULVERTS AND STORM DRAINS	Continuous		
SECTION 604 - DRAINAGE STRUCTURES	Continuous		
SECTION 605 - UNDERDRAINS	Intermittent (1)		
SECTION 606 - GUIDE RAILING AND MEDIAN BARRIER	Intermittent (1)		

CONSTRUCTION INSPECTION REQUIREMENTS			
SPECIFICATION SECTION	**INSPECTION INTERVAL / FREQUENCY**	**WITNESS & HOLD**	**COMMENTS**
SECTION 606 - CIP CONCRETE BARRIER	Continuous		
SECTION 607 - FENCES	Intermittent (1)		
SECTION 608 - SIDEWALKS, DRIVEWAYS, BICYCLE PATHS, AND VEGETATION CONTROL STRIPS	Continuous		
SECTION 609 - CURB AND CURB & GUTTER	Continuous		
SECTION 610 - GROUND VEGETATION - PREPARATION, ESTABLISHMENT AND MANAGEMENT	Intermittent (1)		
SECTION 611 - PLANTING, TRANSPLANTING AND POST PLANTING CARE	Intermittent (1)		
SECTION 614 - PRUNING, IMPROVING AND REMOVING EXISTING VEGETATION	Intermittent (1)		
SECTION 617 - INVASIVE SPECIES MANAGEMENT	Intermittent (1)		
SECTION 619 - WORK ZONE TRAFFIC CONTROL	Continuous		Dedicated WZTC CI shall be provided for both day and night shifts. This CI shall have no additional responsibilities other than WZTC.
SECTION 620 - BANK AND CHANNEL PROTECTION	Intermittent (1)		
SECTION 621 - CLEANING CULVERTS, DRAINAGE STRUCTURES AND EXISTING ROADSIDE SECTIONS	Intermittent (1)	yes	verification of cleaning
SECTION 622 - BUILDINGS AND MISCELLANEOUS STRUCTURES	Intermittent (1)		
SECTION 623 - SCREENED GRAVEL, CRUSHED GRAVEL, CRUSHED STONE, CRUSHED SLAG	Intermittent (1)		
SECTION 624 - PAVED GUTTERS	Continuous		
SECTION 625 - SURVEY OPERATIONS	Intermittent (2)		

CONSTRUCTION INSPECTION REQUIREMENTS			
SPECIFICATION SECTION	**INSPECTION INTERVAL / FREQUENCY**	**WITNESS & HOLD**	**COMMENTS**
SECTION 629 - PETROLEUM STORAGE TANK CLOSURE	Continuous		
SECTION 630 - BARRICADES	Intermittent (2)		
SECTION 633 - CONDITIONING EXISTING PAVEMENT PRIOR TO HOT MIX ASPHALT (HMA) OVERLAY	Continuous		
SECTION 635 - CLEANING AND PREPARATION OF PAVEMENT SURFACES FOR PAVEMENT MARKINGS	Continuous		
SECTION 638 - WHITE SYNTHETIC RESIN BINDER CONCRETE	Continuous		
SECTION 640 - REFLECTORIZED PAVEMENT MARKING PAINTS	Continuous		
SECTION 641 - BRIDGE WASHING	Intermittent (1)	Yes	Hold when certain elements have been cleaned
SECTION 642 - ROADSIDE MAINTENANCE	Intermittent (3)		
SECTION 643 - NOISE BARRIERS	Continuous		
SECTION 644 - OVERHEAD SIGN STRUCTURES	Continuous		
SECTION 645 - SIGNS	Intermittent (1)		
SECTION 646 - DELINEATORS, REFERENCE MARKERS AND SNOWPLOWING MARKERS	Intermittent (1)		
SECTION 647 - REMOVING, STORING, AND RELOCATING SIGNS, SIGN PANEL ASSEMBLIES, SIGN SUPPORTS, AND FOUNDATIONS	Intermittent (1)		
SECTION 648 - SUBSURFACE EXPLORATIONS	Intermittent (2)		
SECTION 649 - AUDIBLE ROADWAY DELINEATORS	Intermittent (1)		
SECTION 650 - TRENCHLESS INSTALLATION OF CASING	Continuous		
SECTION 654 - IMPACT ATTENUATORS - PERMANENT	Intermittent (1)		
SECTION 655 - FRAMES, GRATES AND COVERS	Intermittent (1)		

CONSTRUCTION INSPECTION REQUIREMENTS			
SPECIFICATION SECTION	**INSPECTION INTERVAL / FREQUENCY**	**WITNESS & HOLD**	**COMMENTS**
SECTION 656 - MISCELLANEOUS METALS	Intermittent (1)		
SECTION 657 - PAINTING GALVANIZED AND ALUMINUM SURFACES	Intermittent (1)		
SECTION 659 - TELECOMMUNICATION UTILITIES	Continuous		
SECTION 660 - UTILITIES	Continuous		
SECTION 661 - ELECTRIC UTILITIES	Continuous		
SECTION 662 - GAS, OIL & STEAM UTILITIES	Continuous		
SECTION 663 - WATER SUPPLY UTILITIES	Continuous		
SECTION 664 - SANITARY SEWER UTILITIES	Continuous		
SECTION 670 - HIGHWAY LIGHTING SYSTEM	Continuous		
SECTION 675 - RAILROAD TRACK AND APPURTENANCES	Continuous		
SECTION 680 - TRAFFIC SIGNALS	Intermittent (1)		
SECTION 683 - INTELLIGENT TRANSPORTATION SYSTEMS	Intermittent (1)		
SECTION 685 - EPOXY REFLECTORIZED PAVEMENT MARKINGS	Continuous		
SECTION 687 - THERMOPLASTIC REFLECTORIZED PAVEMENT MARKINGS	Continuous		
SECTION 688 - PREFORMED REFLECTORIZED PAVEMENT MARKINGS	Continuous		
1. Intermittent (1): inspection as needed based on the item/s of work and contractor's mean and methods			
2. Intermittent (2): inspection on a daily basis			
3. Intermittent (3): inspection is required no less than twice per inspection shift.			
4. Continuous: inspection is required continuously throughout the duration of the operation.			

SP-8. COST LOADED SCHEDULE

The Design-Builder shall provide a means to verify costs that the Design-Builder is entitled to under the contract terms, following the Work Payment Structure (WPS), through reports generated from the cost and resource loaded schedule that reflect the physical percentage of work that has been completed. The Design-Builder is required to enter the unit price for each activity in the schedule using the Expenses function in P6. The appropriate cost shall be assigned to each activity, enabling the schedule to be fully cost loaded. The Design-Builder shall enter the costs, units, and major quantities under “Expenses” in Primavera. Associated expenses shall correlate with the work payment structure utilizing the cost codes features and each activity name / description shall be assigned with one cost code which contains a single wok payment structure (WPS) in the schedule. This will enable a report to be generated from the regular Progress Schedule Updates that reflects the amount that the Design-Builder is requesting payment. The report shall be based on the physical percentage of work completed within the reporting period, and must comply with the cost percentages allowed for the WPS deliverables in the Design-Build contract.

SP-9. DB PERFORMANCE ENGINEERED CONCRETE MIXTURES

DB PERFORMANCE ENGINEERED CONCRETE MIXTURES

DESCRIPTION

Develop a Performance Engineered Concrete Mixture for applications to replace Standard Classes of concrete to meet specified performance criteria when desired. Consideration of any acceleration and impacts on shrinkage shall be considered when developing a mixture. Requirements herein do not supersede other contractual requirements for Mass Placement concrete.

MATERIALS

The provisions of §501 shall apply, except as modified herein.

1. Use materials meeting the requirements of 501-2.02

2. Design a concrete mixture proportioned according to the American Concrete Institute Manual of Concrete Practice, ACI 211.1, *Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete*, AASHTO PP 84, *Developing Performance Engineered Concrete Pavement Mixtures*, or equal design procedure to meet the below specified performance criteria.

   Produce a homogeneous mixture of cement, pozzolan (fly ash or GGBFS), fine aggregate, coarse aggregate, NYSDOT Approved List admixtures, and water.

3. Designed a concrete mixture to meet the following requirements:

   - ***Friction.*** Sample and test aggregate for friction characteristics according to the procedures of Materials Method 28 "Friction Aggregate Control and Test Procedures."

   - ***Aggregates and Cementitious Materials.*** Cement and aggregate combinations shall be selected to mitigate the potential for Alkali Silica Reactivity (ASR). Specifically, certain aggregates appear in the Approved List of Sources of Fine & Coarse Aggregates that have use limitations if combined with a high-alkali Portland cement. The Regional Materials Engineer may allow the use of these aggregates in combination with high-alkali cements provided that pozzolans are substituted for cement in the following way:

POZZOLAN SUBSTITUTIONS	
Application	**Substitute Cement by Mass With**
bridge decks, approach slabs, pavements and sidewalks	20% to 25% Class F Fly Ash (711-10) 30% to 35% GGBFS in combination with minimum 5% microsilica
All other applications	Minimum 20% Class F Fly Ash (711-10) Minimum 35% GGBFS

   Alternatively, the contractor may develop a mixture according to AASHTO R-80 (17), *Standard Practice for Determining Reactivity of Concrete Aggregates and Selecting*

Appropriate Measures for Preventing Deleterious Expansion in New Concrete Construction, to determine preventive measures to minimize the risk of expansion when reactive aggregates are used in combination with high alkali cement. Use of this method or other means to mitigate ASR shall be with the approval of the Director, Materials Bureau.

- ***Mixture Performance Criteria.*** Proportion all ingredients to achieve the required performance criteria defined in Table 501, Performance Concrete Mixtures. The Contractor is responsible to assure the different materials selected for use in the PCC mixture are compatible with one another to provide a durable concrete meeting the performance requirements of this specification.

- ***Internal Curing.*** Mixtures for bridge decks, approach slabs, sidewalks and safety walks on decks, and concrete barrier on decks shall include the use of light weight fine aggregates for internal curing according to the NYSDOT Bridge Manual.

4. Perform mix development testing in accordance with ASTM C143, C231, C192, C39, AASHTO T358 and TP118 to assure all performance criteria can be achieved during production and placement.

5. Prior to the start of any concrete placement, provide a copy of the proposed mixture design(s) and trial batch test results to the Department. Submit sufficient data to permit the Department to offer an informed evaluation. Include at least the following:
   - Concrete mix proportions.
   - Material sources. Also include fineness modulus and specific gravity for all aggregates.
   - Compressive Strength at desired ages, 28 day results for records when available.
   - Target slump for placement
   - Target air content of plastic concrete.
   - SAM number results of trial mix
   - Paste volume calculations for mix
   - Resistivity test data

DB PERFORMANCE ENGINEERED CONCRETE MIXTURES

Table 501 Performance Concrete Mixtures[1]				
Design Mix Performance Criteria				
Primary Application / use[2]	**Compressive Strength (psi)**	**Air Content % desired (range)**	**Resistivity[3] (kΩ-cm) α = 1.5**	**Specialty Criteria: Scaling, freeze/thaw, or shrinkage requirements**
Superstructures: bridge decks, approach slabs, sidewalk and safety walk on decks, concrete barrier	4000	5-9	>24	Durability per ASTM C672 ≤ 2 **or** ASTM C666 DF ≥ 90% **or** AASHTO TP118 SAM number <0.20. Shrinkage per AASHTO PP-84 Paste Factor <25%
Substructures: abutments, backwalls, wing walls, columns, pier caps, pedestals	4000	5-9	>24	Shrinkage per AASHTO PP-84 Paste Factor <25%
Footings	4000	--[5]	>14 [4]	--
Piles, drilled shafts, underground applications	4000	--[5]	>14 [4]	--
Tremie	4000	--[5]	>14 [4]	--
Overhead sign bases, signal pole bases, and bases supporting overhead uses	4000	5-9	>14 [4]	--
Sign bases, misc items	3000	5-9	--	--
Sidewalks, gutters, curbs	4000 psi	5-9	>16.5	ASTM C672 ≤ 2 or ASTM C666 DF ≥ 90%
Barriers	4000 psi	5-9	>16.5	--
Headwalls, drainage elements, pipe inverts	4000 psi	5-9	>16.5	--
Maintenance repair	3000 psi	5-9	>16.5	

NOTES :

1. Mixture proportions will be provided by the contractor, using the fineness modulus and bulk specific gravities (saturated surface dry) of the aggregates proposed for use.
2. Any mixture developed for accelerated strength gain shall have the rate of strength gain evaluated at the time of mixture development. Produce and place a 4.0 cy (minimum) trial batch at an off-contract location selected by the Contractor and agreed upon by the Engineer. Produce the trial batch using the same materials and processes as those to be used to produce concrete for the contract. Provide the Engineer a 7-day minimum advance notification of trial batch production. Produce and place the trial batch in the presence of the Engineer, the Regional Materials Engineer, and/or Materials Bureau personnel.
    - Determine the compressive strength of the trial batch concrete at the desired time as discussed in specification or plans.
    - Provide an American Concrete Institute (ACI) Certified Concrete Field Testing Technician, Grade I, or higher, to measure slump, air content, and unit weight of the trial batch.

The mixture will further have shrinkage testing performed with shrinkage of XXX

3. Resistivity requirements based on 6 X 12 cylinders measured at 28 days. Testing procedures follow AASHTO T358.
4. Any concrete that is buried or submerged in high sulfate and saltwater areas shall be designed for Low Chloride Ion Penetration requirements
5. These mixes only require air content if the finished concrete will be exposed to freeze / thaw environments, defined as being within 4' of the atmospheric conditions

SP-10. INSURANCE REQUIREMENTS

INSURANCE COVERAGE

General insurance requirements are specified in Standard Specifications §107-06 – *Insurance*.

As new work locations and involved parties become known, the Contractor shall secure coverage for any new parties as necessary per §107-06A.4. Proof of coverage for the new additional insured parties shall be provided to the Department.

Proof of the Contractor's Workers' Compensation insurance and Disability insurance is required to be provided with the contract agreement. Acceptable proof of all applicable insurances shall be provided before commencing work.

Required Insurances
The following insurances are required on all contracts:

- Workers' Compensation
- Commercial General Liability
- Umbrella or Excess Liability
- Disability
- Commercial Automobile
- Special Protective and Highway Liability

Additional Required Insurances
If the box is checked, it indicates that it is a known additional required insurance:

☐ Professional Liability Insurance

Known to be required due to professional service requirements associated with:

- ☐ Item 202.XX Demolition of Buildings and Structures
- ☐ Item 211.XX Internally Stabilized Cut Structures
- ☐ Item 551.12 Splices for Steel H-Piles (mechanical splices)
- ☐ Item 553.XX Cofferdams
- ☐ Item 554.XX Fill Type Retaining Walls
- ☐ Item 562.XX Reinforced Concrete 3 Sided Structure
- ☐ Item 570.XX Paint Removal Operations
- ☐ Item 585.XX Structural Lifting
- ☐ Item 586.XX Miscellaneous Structural Reconstruction
- ☐ Item 604.XX Drainage Structures (concrete)
- ☐ Item 619.06nn Temporary Structures
- ☐ Item 625.XX Survey
- ☐ Item 650.XX Trenchless Installation of Casing
- ☐ Item 670.XX Highway Lighting System
- ☐ Item 680.XX Traffic Signal Poles
- ☐ Other:

☐ Marine Protection and Indemnity Insurance

Known to be required due to contract work associated with:

- ☐ Expected work from watercraft on navigable waters at a known location
- ☐ A rescue boat/skiff is required (e.g., there will be contract work over water ≥ 5 feet deep, contract work over swift moving water ≥ 2 feet deep, or other situations described in §107-05I – *Working Over or Near Water*)

☐ Railroad Protective Liability Insurance

A foreseeable risk has been identified for contract work to potentially negatively impact the safety of railroad movements and/or cargo at a known work location.

Railroad Entity to be Insured:
Policy Single Limit $ / Aggregate Limit $

☐ Pollution Liability Insurance

Known to be required due to contract work associated with:

- ☐ Item 205.XX Contaminated Soil Operations
- ☐ Item 210.XX Removal & Disposal of Asbestos-Containing Material (buildings, bridges, and highways)
- ☐ Item 570.XX Paint Removal Operations
- ☐ Item 571.XX Disposal of Paint Removal Waste
- ☐ Item 629.XX Petroleum Storage Tank Closure Operations
- ☐ Other:

☐ Unmanned Aircraft Systems Liability Insurance

There is required contract work involving unmanned aircraft.

Minimum Required Policy Limit: $

☐ Builders' Risk Policy

The Department has determined that certain contract work is required to be insured under a Builders' Risk policy.

Minimum Required Policy Limit: $
Structure to be Insured:

LIST OF ADDITIONAL INSURED PARTIES

In accordance with Standard Specifications §107-06A.4 applicable insurance policies shall be endorsed to provide coverage to:

- The State of New York / New York State Department of Transportation
- Any municipality in which the work is being performed
- Any public benefit corporation, railroad, or public utility whose property or facilities are affected by the work
- Any consultants working for or on the project
- Agents or employees of the above listed parties

As any new locations of work are defined or added to the Contract, the Contractor shall extend coverage to any new parties that warrant coverage as per §107-06A.4. Proof of coverage for the new additional insured parties shall be provided to the Department.

Coverage shall be extended to the following known additional insured parties:

- County of
- Counties of
- All municipalities in the County of
- All municipalities in the Counties of
- Town of
- Towns of
- Village of
- Villages of
- City of
- Cities of
- [Railroad companies]
- [Public utility companies]
- [Other applicable additional parties]
- None

SP-11. GUIDELINES FOR THE USE OF LINK SLABS

Requirements for Bridges with Link Slabs

11.1 GENERAL

The term 'Link Slab' shall be as defined in the NYSDOT Bridge Manual.

The use of a link slab at a support with a skew angle that exceeds 45 degrees is prohibited.

For the purposes of analyzing a structure's global behavior and design of the superstructure, bearings, substructures, and foundations, a link slab shall be assumed to act as a pinned connection between the spans it joins. This results in a superstructure that behaves as simply supported at the link slab locations when subject to vertical loads yet articulates similarly to a continuous multi-span superstructure when experiencing horizontal forces and thermal movements. This behavior of the superstructure is referred to as contiguous.

The use of link slabs on a bridge in place of deck expansion joints creates a contiguous segment. A contiguous segment shall be defined as all the spans, whether they be simple span units or continuous span units, that have been joined by link slabs. A contiguous segment's length is the distance between the expansion joints located at the beginning and end of the segment.

Each contiguous segment must contain at least one substructure with fixed bearings. In certain situations, it may be advantageous to have multiple substructures, within a contiguous segment, with fixed bearings. When using this bearing arrangement, the forces generated due to the superstructure's thermal movements shall be accounted for in the analysis/design of the fixed bearings, superstructure, substructures, and foundations.

Type E.B. bearings (deformation expansion, sliding expansion, fixed), conforming to NYSDOT standards, are the only types of bearings permitted for use underneath link slabs. For piers with two lines of bearings supporting two adjacent span ends, at least one line of bearings must be expansion. Sliding expansion bearings, which use a stainless steel over PTFE slip plane, may be necessary for longer contiguous segments. Details and material requirements for sliding expansion bearings are provided in Part 7. The final bearing configuration for a contiguous segment shall be in place prior to the construction of any link slab within a segment. This requirement shall be noted in the contract plans.

The required design procedure uses a simplified approach where the girder's end rotation is applied to the link slab at the ends of the debonded zone to induce a uniform bending moment throughout the debonded portion of the link slab. Although link slabs are assumed to behave as a pinned connection between spans when analyzing the structure's global behavior, they shall not be assumed to act as pinned for the purposes of designing the actual link slab or its anchorage. Link slabs shall be designed following the assumptions, procedures, and requirements used and stated in the UHPC Link Slab Design Example provided in Part 7.

Link slabs shall be detailed in accordance with the UHPC Link Slab Details provided in Part 7. The type of rebar corrosion protection used in link slabs shall match that of the superstructure slab. An expansion joint shall be provided in any concrete component placed on top of a link

slab (barrier, sidewalk, curb, etc.). Within the debonded zone, a bond breaker shall be applied at the interface of the link slab's debonded zone and concrete component(s). Any vertical, or inclined, anchorage reinforcement that protrudes from within the link slab's debonded zone shall be debonded. These details are necessary for the link slab to strain as designed and to prevent excessive cracking of any adjoining concrete component(s).

If a link slab is constructed utilizing staged construction, it may be necessary to install temporary links so that the behavior of the superstructure at the supports is uniform across its entire width. Temporary links shall be designed, detailed, and installed so that the girders where the link slab has not yet been installed will rotate at the same elevation as the centroid of the link slab that is already in place, rather than rotating at the bearings.

11.1.1 BEARING ANALYSIS ASSUMPTIONS

In the context of the NYSDOT LRFD Bridge Design Specifications, a bearing's resistance to movement, no matter how that resistance is generated (deformation, sliding friction, etc.), shall be considered a friction force. For the purposes of this Special Provision, the portion of a bearing's friction force attributable to surfaces sliding past one another shall be taken to be the static friction force, or the force required for stationary surfaces to initiate movement. The bearing's friction force is dependent on various mechanisms such as bearing type, geometry, material properties, pressure, and temperature. The friction force of all bearings shall be accounted for in design of the superstructure, link slabs, substructures, foundations, connections, and the bearings themselves.

Both upper bound and lower bound material property assumptions that effect the behavior of the bearing need to be considered when determining the controlling load effects on a particular bridge component. The bearing material property ranges found in Section 14 of the NYSDOT LRFD Bridge Design Specifications shall be used.

Type E.B. deformation expansion bearings provide horizontal resistance by shear deformation of the elastomer. A bearing's resistance to deformation fluctuates due to variations that occur in the elastomer's shear modulus. As such, both upper bound and lower bound values for the shear modulus need to be considered when determining the load transferred through the bearing, as well as the restraint that the bearings provide to other bridge components.

Type E.B. sliding expansion bearings provide horizontal resistance by either deformation, when the friction force does not exceed the deformation force, or by sliding when the friction force exceeds the deformation force. Both of these behaviors need to be considered when determining the load transferred through the bearing, as well as the restraint that the bearings provide to other bridge components. Being that the friction force is dependent on the materials in contact, surface finish, pressure, temperature, and presence of contaminants, the assumptions used to determine the friction force need to account for both upper bound and lower bound values of all contributing factors. To account for both deformation and sliding, the bearings shall be modeled assuming a linear spring that is limited to generating a force equal to the static friction of the sliding surfaces.

The assumed stiffness of Type E.B. fixed bearings shall be calculated as the flexural stiffness of the bearing pin in single curvature.

11.2 NEW AND REPLACEMENT BRIDGES

New and replacement bridges with link slabs shall be designed in accordance with the NYSDOT LRFD Bridge Design Specifications, NYSDOT Bridge Manual, and Sections 18.1, 18.1.1, and this section of this special provision.

For the design of foundations, substructures, and bearings horizontal force effects shall be determined by using either the relative stiffness or simplified distribution methods defined below.

Relative Stiffness Method
Structural models shall be used to determine the distribution of applied horizontal forces to the substructures and bearings based on the relative stiffness of all participating structural components. At a minimum, models shall include the multi-directional stiffness of the superstructure, bearings, and substructures. Each component's assumed stiffnesses need to be considered such that the controlling force effects are generated at each substructure. In order to meet this requirement multiple structural models are typically needed to envelope variations in component stiffnesses. Given the complexities of performing a structural analysis where an individual component's stiffness alters the distribution of forces, combined with the need to vary stiffness assumptions, the relative stiffness method often lends itself to the use of structural modeling software.

Simplified Distribution Method
Assume that all applied horizontal forces, except for friction and uniform temperature, act on the fixed support. The horizontal forces acting on expansion supports shall be computed using the tributary length of the superstructure, except for friction and uniform temperature. Forces due to friction and uniform temperature shall be calculated under the assumption that the fixed support, and its bearings, are infinitely stiff while using stiffness assumptions at expansion supports that produce the controlling force effects at each substructure. The simplified distribution method shall not be used when multiple substructures within a contiguous segment have fixed bearings.

All forces due to external restraints, such as friction of sliding approach slabs and soil pressure acting on nonconventional abutments, shall be included when determining the thermal forces acting on the substructures. Forces due to external restraints shall be ignored when determining all the other forces acting on the substructures.

Reinforced concrete columns, solid pier stems, and abutment stems shall be modeled using partially cracked section properties that are assumed to be equal to one-half the uncracked transformed section. The load factor for uniform temperature (TU) shall be taken as 1.0 for all the Strength and Service load combinations.

All seismic provisions for new and replacement bridges shall apply and bearing pins shall not be designed to 'fuse' during a seismic event.

The requirements of NYSDOT LRFD Bridge Design Specifications Article 4.7.4.4 shall apply to all substructures that are located underneath a link slab. The length (L) in equation 4.7.4.4-1 shall be taken as the distance from the centerline of the support, for which the support length is being computed, to the furthest expansion joint or jointless abutment of the contiguous segment.

11.3 EXISTING BRIDGES

When link slabs are installed on an existing bridge, a contiguous segment is formed which results in changes to the structure's global behavior. A structural analysis is required to quantify the changes in the horizontal forces acting on existing substructures and foundations. The results of this analysis, along with any other sources of additional load, shall be used to determine if any of the existing substructures, including their foundations, need to be strengthened or replaced, to meet the projects requirements. The Department uses both a simplified analysis and a refined analysis for analyzing existing bridges retrofitted with link slabs. A simplified analysis shall be used and, only if this is not satisfied, may a refined analysis be used.

The requirements of NYSDOT LRFD Bridge Design Specifications Article 4.7.4.4 shall apply to all substructures that are located underneath a link slab. If a substructure does not meet these requirements in its existing state, the bridge seat shall be widened or restrainers shall be installed. Restrainers shall be capable of supporting the spans at the extreme limit state if unseating of the superstructure were to occur. Additionally, restrainers shall not transfer horizontal forces from the superstructure to the substructures. The length (L) in equation 4.7.4.4-1 shall be taken as the distance from the centerline of the support, for which the support length is being computed, to the furthest expansion joint, or abutment, adjacent to the contiguous segment.

11.3.1 SIMPLIFIED ANALYSIS OF CONTIGUOUS SEGMENTS

A simplified analysis only considers the relative change in longitudinal forces acting on the substructures due to the installation of link slabs, new bearings, elimination of longitudinal deck joints, and any other relevant superstructure and substructure modifications.

The premise of a simplified analysis is that as long as the existing structure is competent and the installation of link slabs, along with any other relevant modifications, does not increase the forces on the substructures, then using a simplified analysis for link slab retrofits is a valid way to eliminate bridge joints without needing to analyze each and every component of the existing structure. If the new factored longitudinal forces are found to be greater than the existing factored longitudinal forces, a refined analysis shall be used to determine if any of the existing substructures, and their foundations, need to be strengthened, or replaced, to meet the projects requirements.

When performing a simplified analysis, it is important that the forces be calculated using the same methodology, assumptions, and procedures for both the existing and proposed condition. The exact methodology for applying the forces is inconsequential, as the analysis is looking for the change in applied forces, not the magnitude of the forces. A consistent approach to how the forces are calculated is necessary to accurately capture how the link slabs, along with any other relevant modifications to the structure, alter the forces acting on the substructures. The longitudinal forces used in a simplified analysis shall be those acting at the bridge seat elevation.

The requirement to perform a seismic analysis, meet seismic requirements, and satisfy the Extreme Event I load combination is waived when using the simplified method.

All bearings shall be designed according to the NYSDOT LRFD Bridge Design Specifications and NYSDOT Bridge Manual. All fixed bearing pins shall be designed to resist only the Strength I, III, and V load combinations. Additionally, fixed bearing pins shall not be designed to meet the

requirement for 15% of the total vertical force as stated in Article 14.7.9.2 of the NYSDOT LRFD Bridge Design Specifications. The minimum pin diameter given on the NYSDOT BD Sheets is waived and the smallest available pin diameter that satisfies the design shall be used; over-designing the pin is prohibited. This is required so that during a seismic event the bearing pins will act as a 'fuse', essentially isolating the superstructure from the substructure in the longitudinal direction, preventing excessive damage to the fixed substructure(s).

Given that a simplified analysis only considers the changes in longitudinal forces acting on the substructures, all substructures must be provided with restraint to the superstructure's movement in the lateral direction by the use of guides or keeper angles on the bearings, or shear block(s) on the bridge seats of all substructures, including those with fixed bearings. This results in the transverse loads being shared by all the substructures predominantly along the strong axis of the substructures and foundations. Lateral restraints shall be designed to allow transverse temperature related movement of the superstructure and be aligned with the superstructures assumed direction of thermal movement.

Analysis requirements for comparing the longitudinal forces acting on existing substructures are as follows:

1. Structural models shall be created, for the existing and proposed conditions, that include the abutments, piers, bearings, and superstructure. The objective of these models is to get an accurate assessment of how the longitudinal loads are distributed to the substructures, within a contiguous segment, based on the superstructure's continuity and the relative stiffness of all the supports, which shall include the combined stiffness of the bearings and columns, or stems, at each substructure. An appropriate level of refinement shall be provided in the models to meet this objective.

2. Substructures that are skewed 20° or less to the assumed direction of applied horizontal loads may be modeled as a single element whose section properties represent the combined stiffness of the columns when bending about the substructure's longitudinal axis. Substructures that exceed this skew limit shall be modeled such that bi-axial bending and the corresponding substructure stiffness are accounted for.

3. Reinforced concrete columns, solid pier stems, and abutment stems shall be modeled using partially cracked section properties that are assumed to be equal to one-half the uncracked transformed section.

4. Existing and proposed longitudinal loads shall be computed in accordance with the NYSDOT LRFD Bridge Design Specifications. The load factor for uniform temperature (TU) shall be taken as 1.0 for all the Strength load combinations.

5. When determining braking forces, it shall be assumed that the direction of travel will not change in the future, and that the actual number of lanes that is currently carried, or will be carried at the completion of the project, is used, in lieu of using the number of design lanes that fit within the roadway width.

6. For existing superstructures that are supported on steel rocker bearings or steel sliding bearings, it shall be assumed that 100 percent of the applied longitudinal forces act on the fixed support while each expansion support resists a longitudinal force proportional to their supported tributary length of the superstructure. The sum of longitudinal forces

resisted by all substructures will exceed the total applied longitudinal force to the superstructure.

7. All forces due to external restraints, such as friction of sliding approach slabs and soil pressure acting on nonconventional abutments, shall be included when determining the thermal forces acting on the substructures. Forces due to external restraints shall be ignored when determining all the other forces acting on the substructures.

11.3.2 REFINED ANALYSIS OF CONTIGUOUS SEGMENTS

A refined analysis shall consider all the forces acting on the substructures and their foundations including the effects of link slabs, bearings, and any other relevant superstructure and substructure modifications. These forces shall be determined using a relative stiffness analysis where the distribution of lateral loads is a function of the multi-directional stiffness of the superstructure, bearings, and substructures.

The capacity, or resistance, of all existing substructures and foundations then needs to be evaluated for the new factored loads. If any of the existing substructures or foundations of bridges originally designed with the NYSDOT LRFD Bridge Design Specifications no longer meet their original design code, they shall be strengthened or replaced as part of the scope of the project. For all other bridges, if any of the existing substructures or foundations do not meet either the NYSDOT LRFD Bridge Design Specifications, or the NYSDOT Standard Specifications for Highway Bridges using HS 20 loading, they shall be strengthened or replaced as part of the scope of the project.

All bearings shall be designed according to the NYSDOT LRFD Bridge Design Specifications and the NYSDOT Bridge Manual. All fixed bearing pins shall be designed to resist only the Strength I, III, and V load combinations. Additionally, the pins shall not be designed to meet the requirement for 15% of the total vertical force, as stated in Article 14.7.9.2 of the NYSDOT LRFD Bridge Design Specifications, and the minimum pin diameter given on the NYSDOT BD Sheets is waived. These exemptions are required so that during a seismic event the bearing pins will act as a ‘fuse’ that limits the applied seismic load on the existing fixed substructure(s) to be only slightly greater than the non-seismic loads.

The requirement to perform a seismic analysis, for the purposes of determining the seismic lateral loads, is waived when using the refined method. Rather, the seismic loads used for either the Extreme Event I load combination (if using LRFD), or Group VII (if using LFD), shall be taken as the lateral resistance of the bearing pins. The lateral resistance of the bearing pins shall be the only transverse and longitudinal loads included in seismic load combinations.

The lateral resistance of a bearing pin shall be determined using equation 6.7.6.2.1-1 of the NYSDOT LRFD Bridge Design Specifications with the following modifications: 1) M_u replaced by V_u times the height of the bearing pad (h_{pad}) (combined thickness of elastomeric layers and internal steel plates), 2) F_y replaced by the ultimate strength (F_u) of the steel pin, 3) resistance factors removed, and 4) less than or equal to 0.95 replaced by equal to 1.0. The equation shall then be solved for V_u and the solution used as the lateral resistance of a single bearing pin. The modified equation is as follows:

$$\frac{6.0V_u h_{pad}}{D^3 F_u} + \left(\frac{2.2V_u}{D^2 F_u}\right)^3 = 1.0$$

Analysis requirements when performing a refined analysis are as follows:

1. A structural model for the proposed conditions shall be created that includes the abutments, piers, bearings, and superstructure. The objective of this model is to get an accurate assessment of how the horizontal loads will be distributed to the substructures, within a contiguous segment, based on the superstructure's stiffness and continuity, as well as the relative stiffness of all the supports, which shall include the combined stiffness of the bearings and columns, or stems, at each substructure. An appropriate level of refinement shall be provided in the model to meet this objective.

2. Reinforced concrete columns, solid pier stems, and abutment stems shall be modeled using partially cracked section properties that are assumed to be equal to one-half the uncracked transformed section.

3. The proposed horizontal loads shall be computed in accordance with the appropriate design code, as defined above. When using the NYSDOT LRFD Bridge Design Specifications, the load factor for uniform temperature (TU) shall be taken as 1.0 for all the Strength load combinations.

4. When determining braking forces, it shall be assumed that the direction of travel will not change in the future, and that the actual number of lanes that is currently carried, or will be carried at the completion of the project, is used, in lieu of using the number of design lanes that fit within the roadway width.

5. All forces due to external restraints, such as friction of sliding approach slabs and soil pressure acting on nonconventional abutments, shall be included when determining the thermal forces acting on the substructures. Forces due to external restraints shall be ignored when determining all the other forces acting on the substructures.

SP-12. PROGRAMMATIC AGREEMENT

PROGRAMMATIC AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION
THE NEW YORK STATE HISTORIC PRESERVATION OFFICE
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION AND
THE ONONDAGA NATION
PURSUANT TO 36 CFR § 800.14(b)(1)(ii)
IMPLEMENTING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR
PIN 3501.60, FOR THE INTERSTATE 81 VIADUCT PROJECT
ONONDAGA COUNTY, NEW YORK
16PR06314

WHEREAS, the Federal Highway Administration (FHWA), in coordination with the New York State Department of Transportation (NYSDOT), proposes the Interstate 81 (I-81) Viaduct Project (the Project), a federal-aid transportation project in the City of Syracuse, Onondaga County, New York; and

WHEREAS, the purpose of the Project is to address structural deficiencies and non-standard highway features while creating an improved transportation corridor through the City of Syracuse that meets the transportation needs and provides the infrastructure to support long-range transportation planning efforts; and

WHEREAS, the Project constitutes an undertaking subject to review under Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. § 306108) and its implementing regulation, 36 CFR Part 800: *Protection of Historic Properties,* as amended; and

WHEREAS, based on a balanced consideration of the need for safe and efficient transportation; the social, economic, and environmental effects of the project alternatives; and national, state, and local environmental protection goals, the Community Grid Alternative has been identified as the Project's preferred alternative, as indicated in the Draft Environmental Impact Statement (Draft EIS) for the Project; and

WHEREAS, the Community Grid Alternative proposes the demolition of the existing viaduct between the New York, Susquehanna and Western (NYS&W) Railway bridge and the I-81/I-690 interchange and replacement with a street-level arterial; and

WHEREAS, under the Community Grid Alternative, the existing I-81 between its northern and southern interchanges with Interstate 481 (I-481) will be re-designated as a business loop of I-81 (BL 81); existing I-81 between the southern I-81/I-481 interchange (Interchange 16A) and the I-81/I-481 northern interchange (Interchange 29) in Cicero would be de-designated as an interstate; and existing I-481 will be re-designated as the new I-81; and

WHEREAS, construction of the Project will be carried out in multiple construction phases; and

WHEREAS, the FHWA in coordination with the NYSDOT, and in consultation with the New York State Historic Preservation Office (SHPO), is progressing the Section 106 process with a Programmatic Agreement (Agreement) in accordance with 36 CFR §800.14(b)(1)(ii) because the effects of the Project cannot be fully determined prior to approval of the Project; and

WHEREAS, the NYSDOT participated in the consultation, has responsibilities for implementing stipulations under this PA, and has been invited to be a signatory to this PA; and

WHEREAS, the Advisory Council on Historic Preservation (ACHP), at the invitation of the FHWA, is participating in Section 106 consultation for the Project; and

WHEREAS, based on the Project's location within the geographical areas of interest identified by the Onondaga Nation and the Tuscarora Nation for Section 106 consultation, the FHWA formally initiated government-to-government consultation with the Nations for the I-81 Viaduct Project in accordance with 36 CFR §800.2(c)(2)(ii), and the Tuscarora Nation subsequently agreed to defer their Section 106 consultation status on the Project to the Onondaga Nation; and

WHEREAS, the FHWA approved requests from the following individuals and organizations to participate as Consulting Parties in the Section 106 process, providing them an opportunity to articulate their views on the identification of historic properties and evaluation of the Project's effects on those properties:

- Syracuse-Onondaga County Planning Agency
- Syracuse Housing Authority
- Syracuse Metropolitan Transportation Council
- Town of DeWitt Historian, Historical Preservation Society
- Preservation League of New York State
- City of Syracuse, Department of Engineering
- Downtown Committee of Syracuse
- Preservation Association of Central New York
- Central New York Chapter of the American Institute of Architects (AIA-CNY)
- Central New York Regional Planning and Development Board
- The Erie Canal Museum
- The Northside Urban Partnership
- Northeast Hawley Development Association, Inc.
- Quante Wright
- Douglas Armstrong
- Historic Oakwood Preservation Association
- Housing Visions; and

WHEREAS, the FHWA in coordination with the NYSDOT, and in consultation with the SHPO, established an Area of Potential Effects (APE) (**Appendix 1**) in accordance with 36 CFR § 800.4(a)(1) to incorporate potential direct and indirect effects associated with the combined scope of work for the two Build Alternatives that were evaluated in the Draft EIS for the Project, the Viaduct Alternative and the Community Grid Alternative; and

WHEREAS, due to the size of the APE, existing conditions within an urban setting, and inaccessibility of some areas for testing in advance of construction, the FHWA and NYSDOT, in consultation with the SHPO, agreed to implement a phased process to defer the final identification and evaluation of archaeological properties, pursuant to 36 CFR § 800.4(b)(2), as provided for in this Agreement; and

WHEREAS, the NYSDOT has retained professional archaeologists (henceforth referred as "Archaeologist") meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology (36 CFR Part 61) to conduct archaeological surveys and prepare reports in accordance with accepted professional standards, including the SHPO *Phase I Archaeological Report Format Requirements* (2005), the New York Archaeological Council's *Standards for Cultural Resources Investigations and the Curation of*

Archaeological Collections in New York (1994), and the *New York State Education Department Cultural Resources Survey Program Work Scope Specifications for Cultural Resources Investigations on New York State Department of Transportation Projects* (2004); and

WHEREAS, in accordance with New York State Education Law Section 233, all scientific specimens and collections, works of art, objects of historic interest and similar property appropriate to a general museum, if owned by the state and not placed in other custody by a specific law, shall constitute the collections of the state museum, and the state museum shall be the custodian of the collections, shall perform standard curatorial, research and educational activities; and

WHEREAS, the Onondaga Nation has expressed an interest in curating any Haudenosaunee artifacts recovered through archaeological investigations for the Project; and

WHEREAS, the FHWA and the NYSDOT recognize other regulations, including the Native American Graves Protection and Repatriation Regulations (43 CFR Part 10), which will be followed as appropriate; and

WHEREAS, the NYSDOT on behalf of the FHWA, coordinated with the SHPO and the Onondaga Nation on the development of the *Phase IA Archaeological Sensitivity Assessment,* September 2016 (*Phase IA Assessment*), to establish the likely presence of archaeological resources within the APE and develop historic contexts for the Native American and Historic Periods; and

WHEREAS, the *Phase IA Assessment* concluded that the potential presence of archaeological sites within the APE is highly variable, requiring different methods of archaeological investigation depending on existing conditions, the anticipated depth of proposed Project impacts, and the type and extent of prior ground disturbance at specific locations; and

WHEREAS, the FHWA and the NYSDOT recognize that sensitivity for Haudenosaunee artifacts also depends on the proximity to current and historic waterways and the Onondaga Nation's oral history or other indigenous knowledge of ancestral presence in an area; and

WHEREAS, the Project's Archaeologists prepared the *Phase IB Archaeological Survey Work Plan: Plan for Phase IB Archaeological Survey and Archaeological Monitoring during Construction Including Data Recovery*, October 2017 (*Phase IB Work Plan*), identifying areas within the Project's APE for direct effects to be investigated through shovel testing and machine-aided testing in advance of the Project's construction and archaeological monitoring during construction; and

WHEREAS, the NYSDOT on behalf of the FHWA, coordinated with the SHPO and Onondaga Nation on the development of the *Phase IB Work Plan*, met to discuss the Onondaga Nation's concerns on June 13, 2017, considered and addressed comments received, and received notice by letter dated November 3, 2017 that the SHPO had no further concerns with the document; and

WHEREAS, the Project's Archaeologists conducted the initial stage of field investigations in accordance with the approved *Phase IB Work Plan* (**Appendix 2**) between November 2017 and September 2020, and the NYSDOT provided copies of the report entitled *Phase IB Archaeological Survey: Shovel Testing*, revised September 2020, (*Shovel Testing Report*) to the SHPO, the Onondaga Nation, and the Tuscarora Nation for review and comment; and

WHEREAS, the shovel testing portion of the Phase IB survey identified two historic period archaeological sites, the Britton Lime Kiln Site and the Crouse Road Site, which were recommended not eligible

for the National Register of Historic Places (NRHP), and did not identify any Native American cultural artifacts, materials or archaeological sites; and

WHEREAS, based on review of the *Shovel Testing Report*, the SHPO expressed no concerns or comments on the report by letter dated October 26, 2020 and concurred with the report's finding and recommendations by letter dated January 11, 2021; and

WHEREAS, the FHWA and NYSDOT met with representatives of the Onondaga Nation on January 20, 2021 to consider and discuss the Nation's recommendation for additional pre-construction investigation due to concerns regarding the potential presence of cultural artifacts and human remains in previously disturbed soils and unscreened fill materials, and the Onondaga Nation's further recommendation for on-site monitors during construction; and

WHEREAS, the FHWA and NYSDOT determined that additional pre-construction shovel testing was not warranted, and agreed to provide opportunities for representatives of the Onondaga Nation to participate in archaeological monitoring during construction in locations specified in the approved *Phase IB Work Plan*; and

WHEREAS, due to the Project's geographic size, location, and construction complexities, the FHWA has determined that Native Nation monitoring is warranted in locations within one quarter mile of documented existing and historic waterbody alignments where construction activities would involve excavation below ground surface (excluding existing infrastructure), as depicted in **Appendix 9**; and

WHEREAS, in accordance with 36 CFR §800.5(a)(3), a phased process will be used to apply the *criteria of adverse effect* to any National Register (NR) eligible archaeological properties that may be identified through the phased identification and evaluation efforts being conducted pursuant to 36 CFR §800.4(b)(2) and described in the approved *Phase IB Work Plan*; and

WHEREAS, the Onondaga Nation has expressed a preference for Archaeologists with direct experience or advanced training in Haudenosaunee artifacts and culture; and

WHEREAS, the NYSDOT, in coordination with the FHWA and in consultation with the SHPO, conducted an inventory and evaluation of architectural properties within the APE and identified four (4) historic districts with a total of 97 contributing resources, and 98 individual architectural properties listed or eligible for inclusion in the National Register of Historic Places; and

WHEREAS, the NYSDOT in coordination with the FHWA applied the *criteria of adverse effect*, as defined by 36 CFR §800.5(a)(1), to evaluate known effects on identified historic architectural properties within the APE for the Viaduct Alternative and the Community Grid Alternative, and prepared documentation as specified in 36 CFR §800.11(e); and

WHEREAS, the NYSDOT concluded, as recorded in the *Finding Documentation*, that the Viaduct Alternative would result in an *adverse effect* on NR-eligible or listed architectural properties within the APE and the Community Grid Alternative would have *no adverse effect* on NR-eligible or listed architectural properties within the APE; and

WHEREAS, the NYSDOT, in coordination with FHWA, provided the draft *Finding Documentation* to the Onondaga Nation, Tuscarora Nation, and other Consulting Parties on August 12, 2019 for a 30-day review period; and

WHEREAS, the NYSDOT, in coordination with FHWA, provided the draft *Finding Documentation* to the SHPO on February 10, 2021 for their preliminary review and comment; and

WHEREAS, based on review of the draft *Finding Documentation,* the SHPO provided an opinion on March 4, 2021, concurring with the assessment of effects on historic architectural resources for the Viaduct Alternative and the Community Grid Alternative, and agreed with the NYSDOT recommendation to seek to develop a Programmatic Agreement to guide the remainder of the Section 106 consultation process for the Project; and

WHEREAS, the NYSDOT in coordination with FHWA provided the *Finding Documentation* to the SHPO on April 8, 2021 for their final review and concurrence; and

WHEREAS, based on review of the provided *Finding Documentation*, the SHPO concurred that the Community Grid Alternative would not adversely affect historic architectural resources by letter dated April 15, 2021; and

WHEREAS, based on review of the provided information, the FHWA determined by letter dated April 23, 2021, that the Viaduct Alternative would result in an *adverse effect* on historic architectural resources, and the Community Grid Alternative (preferred alternative) would have *no adverse effect* on historic architectural resources, and concurred with developing a Programmatic Agreement to outline the continued Section 106 consultation process and assessment for archaeological resources; and

WHEREAS, the Onondaga Nation has participated in the consultation, has responsibilities for implementing stipulations under this Agreement, and in a phone conversation with the FHWA on October 7, 2021, accepted the FHWA's invitation to be an invited signatory to this Agreement; and

WHEREAS, the FHWA invited the other Consulting Parties to sign the Agreement as Concurring Parties; and

NOW, THEREFORE, the FHWA, SHPO, ACHP, NYSDOT and the Onondaga Nation agree that the Project shall be implemented in accordance with the following stipulations in order to take into account the effect of the Project on historic properties.

STIPULATIONS

The FHWA, in coordination with the NYSDOT, shall ensure that the following measures are carried out.

I. Roles and Responsibilities

A. As the lead federal agency, FHWA shall be legally responsible for all Section 106 findings and determinations and shall ensure that the terms of this Agreement are carried out to complete the Section 106 process. The FHWA shall carry out Nation-to-Nation consultation with the Onondaga Nation as described in Stipulation IV and **Appendix 5**.

B. The NYSDOT shall coordinate, manage, and oversee implementation of the approved *Phase IB Work Plan* for continuing archaeological investigations through Final Design and Construction phases of the Project, as outlined in Stipulation V, with the assistance of Archaeologists and Native Nation Monitors. The NYSDOT's commitment and ability to complete the implementation of the approved *Phase IB Work Plan* will not be impaired if the Native Nation Monitors do not participate in the full range of continuing archaeological investigations if the NYSDOT has provided the required notice, as specified in **Appendix 6**.

C. The SHPO shall advise and assist the FHWA in carrying out Section 106 responsibilities for the Project. Based on information provided by the NYSDOT on behalf of the FHWA, the SHPO shall provide comments and/or concurrence within the specified review periods to determine National Register eligibility and consider measures to avoid, minimize, or mitigate any adverse effects on archaeological sites that may be identified through continuing archaeological investigations.

D. The ACHP shall provide policy guidance to the FHWA and advise on the resolution of any dispute or objection from a signatory to this Agreement, a concurring party, or member of the public, as needed.

E. The Onondaga Nation will continue to participate in ongoing Section 106 consultation for the identification and evaluation of Haudenosaunee cultural materials, artifacts, archaeological resources and any potential human remains. The Onondaga Nation will also provide Native Nation Monitors to participate in archaeological fieldwork, as specified in **Appendix 4, Appendix 5,** and **Appendix 6**. Construction shall not be precluded from progressing if Native Nation Monitors are not present and the NYSDOT has provided the required notice, and **Appendix 6**.

II. Professional Standards

A. All archaeological investigations carried out pursuant to this Agreement shall be conducted by or under the direct supervision of an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology (36 CFR Part 61).

B. Native Nation monitoring will be conducted by individuals selected by the Onondaga Nation, and are not required to meet the standards defined in Stipulation II A. The FHWA and/or the NYSDOT will defer to the Onondaga Nation to determine how Native Nation Monitors will be designated as such by the Onondaga Nation.

III. Curation

A. All collections, consisting of artifacts, notes and other materials associated with archaeological investigations, will be curated in accordance with 36 CFR Part 79 – Curation of Federally-Owned and Administered Archaeological Collections, and the New York Archaeological Council (NYAC)

Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State (1994).

B. For the purpose of study, artifacts collected through archaeological investigations for the Project will be retained by the Archaeologist for a period of up to one year after the end of the Section 233 permit. The Archaeologist may request extensions, as needed, from the State Museum. The Archaeologist shall collect, process, and prepare artifacts in accordance with the New York State Museum's (NYSM) Accession Policy and Accession Standards, as articulated in the NYSM "Archaeological Curation Guidelines".

1. The Onondaga Nation may submit a request to the State Museum for a loan(s) of any artifact(s) or collections accessioned by the NYSM, consistent with that institution's established policy and procedures.

2. If the State Museum declines to accession any Haudenosaunee artifact(s) or archaeological collections from state lands under the jurisdiction of the NYSDOT, the NYSDOT shall then offer these objects and materials to the Onondaga and Tuscarora Nations.

3. If any artifacts which may be or are determined to be cultural objects, as defined by the Native American Graves Protection and Repatriation Act, 25 U.S.C. § 3001 et seq., are discovered, the NYSDOT shall notify the Onondaga and Tuscarora Nations and the New York State Museum and the cultural objects shall be immediately offered to the New York State Museum for review, inventory/summary, publication of notice, and repatriation to the Nations, pursuant to NAGPRA. If the State Museum declines to take possession or control of cultural objects, the NYSDOT shall immediately offer to return the objects to the Onondaga and Tuscarora Nations. If both the State Museum and the Onondaga and Tuscarora Nations decline to take possession of artifacts that are or may be cultural objects, as defined by NAGPRA, these materials may be retained, processed, and prepared by the Archaeologist in the same manner as any other artifacts collected during construction.

IV. Native Nation Consultation

A. The FHWA, in coordination with the NYSDOT, shall continue to carry out formal Section 106 consultation with the Onondaga Nation for the identification and evaluation of cultural materials, artifacts and archaeological features encountered during machine-aided testing or archaeological monitoring during construction, as specified in **Appendix 5** and **Appendix 6**.

B. The FHWA, in coordination with the NYSDOT, shall carry out consultation with the Onondaga Nation for the identification of any human remains, or potential human remains, that may be encountered through archaeological investigations in identified areas of sensitivity or as unanticipated discoveries during construction of the Project, as specified in **Appendix 3**, **Appendix 5** and **Appendix 6**. The consultation will include a consideration of measures to avoid, minimize, or mitigate adverse effects.

C. All signatories to this Agreement shall follow the consultation procedures and protocols as specified in **Appendix 5** and **Appendix 6**.

V. Identification and Evaluation of Archaeological Properties

The NYSDOT, in coordination with the FHWA, shall complete the identification and evaluation of archaeological properties pursuant to 36 CFR §800.4(b) and (c) by implementing the approved *Phase*

IB Work Plan for the Project (**Appendix 2**). Archaeological investigations will proceed through the Final Design and Construction phases of the Project, as locations become accessible.

A. Construction Phase Archaeological Work Plan

1. Archaeological investigations during construction shall be carried out in accordance with a Construction Phase Archaeological Work Plan to be developed by the Archaeologist as additional information regarding construction phasing becomes available. The NYSDOT shall provide the draft document to the SHPO, Onondaga Nation, and FHWA for review and comment prior to approval.

    a. The Construction Phase Archaeological Work Plan will supplement the approved *Phase IB Work Plan* and will provide more detail regarding potential types of archaeological finds anticipated to occur in areas of known archaeological sensitivity.

    b. Using engineering plans, the Construction Phase Archaeological Work Plan will document the evaluation of anticipated disturbance in archaeologically sensitive areas, describe strategies for implementing the approved Phase IB Work Plan, and describe the sequencing of archaeological survey and/or monitoring based upon the anticipated construction schedule.

    c. The NYSDOT, on behalf of the FHWA, will consult with the SHPO and with the Onondaga Nation for areas identified as sensitive for Native American artifacts or the potential presence of human remains on the development of the Construction Phase Archaeological Work Plan.

    d. Following established standards and methodologies, the NYSDOT, on behalf of the FHWA, shall carry out remaining investigations to identify archaeological properties that may be affected by the Project, consistent with the Construction Phase Archaeological Work Plan.

B. Machine-Aided Archaeological Testing in Advance of Construction

1. Machine-aided testing will be conducted in advance of construction at selected locations within the APE for direct effects, as identified in the approved *Phase IB Work Plan*, to investigate the potential presence of intact archaeological deposits or features below disturbed soil layers, fill and/or pavement. Machine-aided archaeological excavations will be scheduled and timed to occur immediately before the start of the Project's construction activities at those locations.

2. The Onondaga Nation will provide Native Nation Monitors to participate in machine-aided archaeological testing, as described in **Appendix 5**, in locations specified in the approved Phase IB Work Plan.

3. Within two weeks following the completion of machine-aided testing, the Archaeologist will provide an end-of-field letter to the NYSDOT, summarizing the preliminary results, including recommendations for additional investigations for Phase II testing, as needed, to determine National Register eligibility for potentially eligible resources.

4. The NYSDOT, in coordination with the FHWA and in consultation with the SHPO, will consider the Archaeologist's recommendation(s) for Phase II site examination. If Native American cultural materials or features are identified, the NYSDOT and the FHWA will seek and consider input from the Onondaga Nation.

5. The Archaeologist will proceed with Phase II field investigations immediately upon approval from the NYSDOT.

6. The Archaeologist will prepare and submit to the NYSDOT a draft report summarizing the results of Phase IB machine-aided testing and Phase II field investigations of identified archaeological sites. The report will provide an eligibility recommendation for each site.

    a. The NYSDOT will distribute the draft report to the SHPO, FHWA, and Onondaga Nation with a 30-day period for review and comment. The NYSDOT, in coordination with the FHWA, will consider any comments received during the review period and direct the Archaeologist to make revisions as needed to finalize the report.

    b. The NYSDOT, in coordination with the FHWA, will formally request SHPO concurrence with the recommended eligibility findings in the report.

6. If there are no NR-eligible archaeological properties identified as a result of machine-aided testing, there will be no further archaeological investigations until archaeological monitoring is implemented during construction of the Project, in accordance with the approved *Phase IB Work Plan* (**Appendix 2**).

7. The NYSDOT, on behalf of the FHWA, will consult with the SHPO and with the Onondaga Nation for areas identified as sensitive for Native American artifacts or the potential presence of human remains regarding the need for archaeological monitoring during construction in locations identified but not selected for machine-aided testing.

C. Archaeological Monitoring during Construction

1. Archaeological monitoring during construction will be conducted under the supervision of an Archaeologist meeting the Secretary of the Interior's Professional Qualification Standards (36 CFR 61, Appendix A).

2. The Onondaga Nation will provide Native Nation Monitors to participate in archaeological monitoring during construction in locations specified in the approved *Phase IB Work Plan,* in any additional areas designated for archaeological monitoring in the Construction Phase Archaeological Work Plan, and in any areas within 50 meters of where unanticipated discoveries of Haudenosaunee or potentially Haudenosaunee archaeological resources, cultural objects, including objects of cultural patrimony, sacred objects, and funerary objects, or human remains are made, as described in **Appendix 5**.

VI. Consultation to Avoid, Minimize or Mitigate Adverse Effects on Archaeological Properties

A. The NYSDOT, in coordination with the FHWA and in consultation with the SHPO, and with the Onondaga Nation for Native American sites, will apply the criteria of adverse effect (36 CFR §800.5(a)(1)) to NR-eligible archaeological properties within the APE, and document its findings.

B. If, as a result of this analysis, the FHWA determines that the Project may have an adverse effect on any archaeological property, the FHWA, in coordination with the NYSDOT, will consult with the SHPO, and with the Onondaga Nation for Native American sites, to explore measures to avoid, minimize, or mitigate adverse effects. The FHWA, in coordination with the NYSDOT, will ensure the implementation of any modifications or conditions to avoid or minimize adverse effects, as agreed upon through consultation.

C. In the event that adverse effects cannot be avoided, Data Recovery excavations may be considered in consultation among the FHWA, SHPO, and the NYSDOT, and including the Onondaga Nation for

Native American sites. If it is determined through consultation that Data Recovery is an appropriate treatment, the NYSDOT will direct the Archaeologist to prepare an Archaeological Data Recovery Plan (DRP) for each affected property, consistent with the above-referenced standards and guidelines for archaeology. DRPs for more than one individual property may be compiled as a single report for the purpose of review by the SHPO and by the Onondaga Nation for Native American sites.

D. If adverse effects cannot be fully avoided, and Data Recovery is not determined appropriate, the FHWA, in coordination with NYSDOT, consultation with the SHPO, and with the Onondaga Nation for Native American sites, will continue consultation to determine alternate mitigation such as preservation in place, site burial, or other measures, and will prepare an archaeological treatment plan for each site. Treatment plans for more than one individual site may be compiled as a single report for the purpose of review by the SHPO and by the Onondaga Nation for Native American sites.

E. The FHWA, in coordination with NYSDOT, will distribute the treatment plan or DRP for a 15-calendar day review and comment by the SHPO, and by the Onondaga Nation for Native American sites.

FHWA, in coordination with the NYSDOT and in consultation with the SHPO, and with the Onondaga Nation for Native American sites, will consider all timely comments from reviewing parties in finalizing the treatment plan or DRP. If no reviewing party comments are received within 15 calendar days, FHWA will approve the treatment plan or DRP and ensure its implementation.

VII. Changes in Project Scope

In the event of any changes to the Project scope, the following measures shall be implemented in consultation with the signatories and concurring parties to this Agreement:

A. The FHWA, in coordination with the NYSDOT and in consultation with the SHPO, shall assess and revise the Project APE as needed to incorporate any additional areas where the Project may have the potential to affect historic properties.

B. Following established standards and methodologies, the NYSDOT, on behalf of the FHWA, shall carry out additional investigations to identify historic architectural and archaeological properties that may be affected by the Project.

C. The FHWA, in coordination with the NYSDOT, shall document an assessment of the Project's effects on any new historic properties and explore measures to avoid, minimize, or mitigate effects on these properties in consultation with the SHPO, Onondaga Nation, and other Section 106 Consulting Parties.

D. The FHWA, in coordination with the NYSDOT, shall ensure the preparation of appropriate reports and documents, shall notify Section 106 Consulting Parties as appropriate, including the Onondaga Nation, of any changes in the Project's effect on historic properties, and shall provide an opportunity for review and comment.

E. If a change in project scope results in adverse effects to previously unidentified historic properties (district, site, building, structure or object), the FHWA, in coordination with the NYSDOT, shall consult with all Consulting Parties to amend the Agreement in accordance with Stipulation XIII.

VIII. Post-Review Discoveries (Archaeology)

If new archaeological resources are discovered or unanticipated effects on archaeological properties are identified during construction, and there is no Archaeologist present to conduct archaeological monitoring as stipulated herein, the NYSDOT Standard Specifications, Section 107-01 - Laws, Rules, Regulations and Permits, D. Archeological Salvage and **Appendix 6** shall apply.

In accordance with 36 CFR 800.13(b)(3), the FHWA in coordination with the NYSDOT and in consultation with the SHPO will apply the National Register criteria (36 CFR Part 63) to evaluate any new archaeological resources and to consider measures to avoid, minimize or mitigate adverse effects on NR-eligible properties. Additionally, the FHWA in coordination with the NYSDOT will consult with the Onondaga Nation for Native American cultural materials and sites.

The NYSDOT, on behalf of the FHWA, will consult with the SHPO and the Onondaga Nation regarding the need to expand the areas identified for archaeological monitoring during construction to include locations where the Project would involve excavation within 50 meters of identified Native American artifacts.

IX. Post-Review Discoveries (Human Remains)

If evidence of burials, human remains or potential human remains is encountered during construction, the NYSDOT shall suspend all work in the immediate vicinity, protect the remains from further disturbance, and immediately contact the SHPO, FHWA, ACHP, and the Onondaga Nation. The NYSDOT, in coordination with the FHWA, will implement the current *NYSDOT Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction* [(hereafter "NYSDOT Inadvertent Discoveries Procedures") (**Appendix 3**)], the 2002 *Haudenosaunee Protocol for Handling Discovery of Human Remains* [(hereafter "2002 Haudenosaunee Protocol") (**Appendix 3**)], and any additional provisions incorporated in **Appendix 5** and **Appendix 6**. Construction activities in the location of the discovery will be suspended pending notification to and consultation among the SHPO, NYSDOT, FHWA, and the Onondaga Nation, in accordance with these procedures.

The NYSDOT, on behalf of the FHWA, will consult with the SHPO and the Onondaga Nation regarding the need to expand the areas identified for archaeological monitoring during construction to include locations where the Project would involve excavation within 50 meters of the unanticipated discovery of human remains.

If requested by the Onondaga Nation, the FHWA and the NYSDOT will assist the Onondaga Nation in the relocation and reinterment of human remains determined or presumed to be Native American.

X. Confidentiality

Sensitive information concerning the location, character, or ownership of archaeological resources may be withheld from public disclosure in accordance with Section 304 of the National Historic Preservation Act (54 U.S.C. § 307103).

XI. Monitoring and Reporting

Each year following the execution of this Agreement until it expires or is terminated, the FHWA, in coordination with the NYSDOT, shall provide all parties to this Agreement a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any issues encountered, and any disputes and objections received in the FHWA's efforts to carry out the terms of this Agreement.

The NYSDOT will submit to the FHWA annually a written status of each stipulation included herein. The NYSDOT will provide a written notification to the FHWA for concurrence once all stipulations have been completed. Upon FHWA concurrence, the Section 106 process will be deemed completed.

XII. Dispute Resolution

Should any signatory or concurring party to this Agreement object at any time to any actions proposed or the manner in which the terms of this Agreement are implemented, the FHWA shall consult with such party to resolve the objection. If the FHWA determines that such objection cannot be resolved, the FHWA will:

A. Forward all documentation relevant to the dispute, including the resolution proposed by the FHWA to the ACHP. The ACHP shall provide the FHWA with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the FHWA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties and provide them with a copy of this written response. The FHWA will then proceed according to the final decision.

B. If the ACHP does not provide its advice regarding the dispute within the 30-day time period, the FHWA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, FHWA shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to this Agreement and provide them and the ACHP with a copy of such written response.

C. The responsibilities of the FHWA to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute remain unchanged**.**

XIII. Amendments

This Agreement may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all signatories is filed with the ACHP.

XIV. Termination

If any signatory to this Agreement determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation XIII. If an amendment cannot be reached within thirty (30) days, any signatory may terminate the Agreement upon written notification to the other signatories.

Once the Agreement is terminated, and prior to work continuing on the Project, the FHWA must either (a) execute an Agreement pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond

to the comments of the ACHP under 36 CFR § 800.7. The FHWA shall notify the signatories as to the course of action they will pursue.

XV. Duration

This Agreement will be null and void if its terms are not carried out within ten (10) years from the date of its execution. Prior to such time, the FHWA may consult with the other signatories to reconsider the terms of the Agreement and amend it in accordance with Stipulation XIII.

APPENDICES

Appendix 1: Area of Potential Effects

Appendix 2: *Phase IB Archaeological Survey Work Plan: Plan for Phase IB Archaeological Survey and Archaeological Monitoring during Construction Including Data Recovery*, October 2017

Appendix 3: NYSDOT Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction
2002 Haudenosaunee Protocol for Handling Discovery of Human Remains

Appendix 4: Roles and Responsibilities in Construction

Appendix 5: Native Nation Consultation

Appendix 6: Coordination and Communication Protocols in Construction
Protocols for Communication in Construction (Flowchart)

Appendix 7: Contacts

Appendix: 8: Sample Contract

Appendix 9: Areas of Potential Native Nation Monitoring (Map 1, Sheets 1 and 2)
Focus Map - Areas of Potential Native Nation Monitoring (Map 2, Sheets 1 and 2)
Typical Road Section and Associated Definitions

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

SIGNATORY:

FEDERAL HIGHWAY ADMINISTRATION

BY: _____ DATE: 5/12/2022

RICHARD J. MARQUIS, DIVISION ADMINISTRATOR, FHWA NEW YORK DIVISION

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

SIGNATORY:

NEW YORK STATE HISTORIC PRESERVATION OFFICE

BY: R Daniel Mackay DATE: 5/11/2022

R. DANIEL MACKAY, DEPUTY COMMISSIONER, STATE HISTORIC PRESERVATION OFFICER

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

SIGNATORY:

ADVISORY COUNCIL ON HISTORIC PRESERVATION

BY: _____ DATE: _____
REID NELSON, EXECUTIVE DIRECTOR (ACTING)

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

INVITED SIGNATORY:

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

BY: _____ DATE: 4-18-2022

NICOLAS CHOUBAH, CHIEF ENGINEER

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

INVITED SIGNATORY:

ONONDAGA NATION

BY: Tadodaho Sidney Hill DATE: 5/11/22

PRINT NAME: Tadodaho Sidney Hill

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

SYRACUSE-ONONDAGA COUNTY PLANNING AGENCY

BY: _____ DATE: 4/25/22
DAN KWASNOWSKI, DIRECTOR

BY: _____ DATE: 4/27/22
OWEN KERNEY, ASSISTANT DIRECTOR

BY: _____ DATE: _____
KATE AUWAERTER, PRESERVATION PLANNER

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

SYRACUSE HOUSING AUTHORITY

BY: _____ DATE: _____
BILL SIMMONS, DIRECTOR

BY: _____ DATE: _____
CRAIG L. CORRIDERS, HOUSING PROPERTY MANAGER

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

SYRACUSE METROPOLITAN TRANSPORTATION COUNCIL

BY: _____ DATE: 4/19/22

JAMES D'AGOSTINO, DIRECTOR

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

TOWN OF DEWITT HISTORIAN, HISTORICAL PRESERVATION SOCIETY

BY: _____ DATE: _____
ELEANOR L. JOHNSON, TOWN OF DEWITT HISTORIAN

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

PRESERVATION LEAGUE OF NEW YORK STATE

BY: _____ DATE: 4-26-2022

KATIE EGGERS COMEAU, VICE PRESIDENT FOR POLICY AND PRESERVATION

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

CITY OF SYRACUSE, DEPARTMENT OF ENGINEERING

BY: Mary E. Robison DATE: 04/28/2020

MARY ROBISON, P.E., CITY ENGINEER

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

DOWNTOWN COMMITTEE OF SYRACUSE

BY: _____ DATE: 4/13/22

MERIKE TREIER, EXECUTIVE DIRECTOR

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

PRESERVATION ASSOCIATION OF CENTRAL NEW YORK

BY: _____ DATE: 4/26/2022

ANDREW ROBLEE, PRESIDENT

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

CENTRAL NEW YORK CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS (AIA-CNY)

Andrew Schuster, President AIA-CNY

BY: _____ DATE: 4/25/23

ROBERT HALEY

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

CENTRAL NEW YORK REGIONAL PLANNING AND DEVELOPMENT BOARD

BY: _____ DATE: _____
DAVID BOTTAR, EXECUTIVE DIRECTOR

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

THE ERIE CANAL MUSEUM

BY: _____ DATE: _____
NATALIE STETSON, EXECUTIVE DIRECTOR

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

THE NORTHSIDE URBAN PARTNERSHIP

BY: _____ DATE: 4/18/2022

JONATHAN LINK LOGAN, DIRECTOR

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

NORTHEAST HAWLEY DEVELOPMENT ASSOCIATION, INC.

BY: _____ DATE: _____
ANDREA B. WANDERSEE, EXECUTIVE DIRECTOR

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

QUANTE WRIGHT

BY: _____ DATE: _____
QUANTE WRIGHT

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

DOUGLAS ARMSTRONG

BY: _____ DATE: 25 April 2022

DOUGLAS ARMSTRONG, PHD, RPA

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

HISTORIC OAKWOOD CEMETERY PRESERVATION ASSOCIATION

BY: _____ DATE: _____
JOHN AUWAERTER, BOARD MEMBER

Execution of this Agreement by the FHWA, the SHPO, the ACHP, the NYSDOT, and the Onondaga Nation and implementation of its terms is evidence that the FHWA has taken into account the effects of this Project on historic properties and has afforded the ACHP an opportunity to comment.

CONCURRING PARTY:

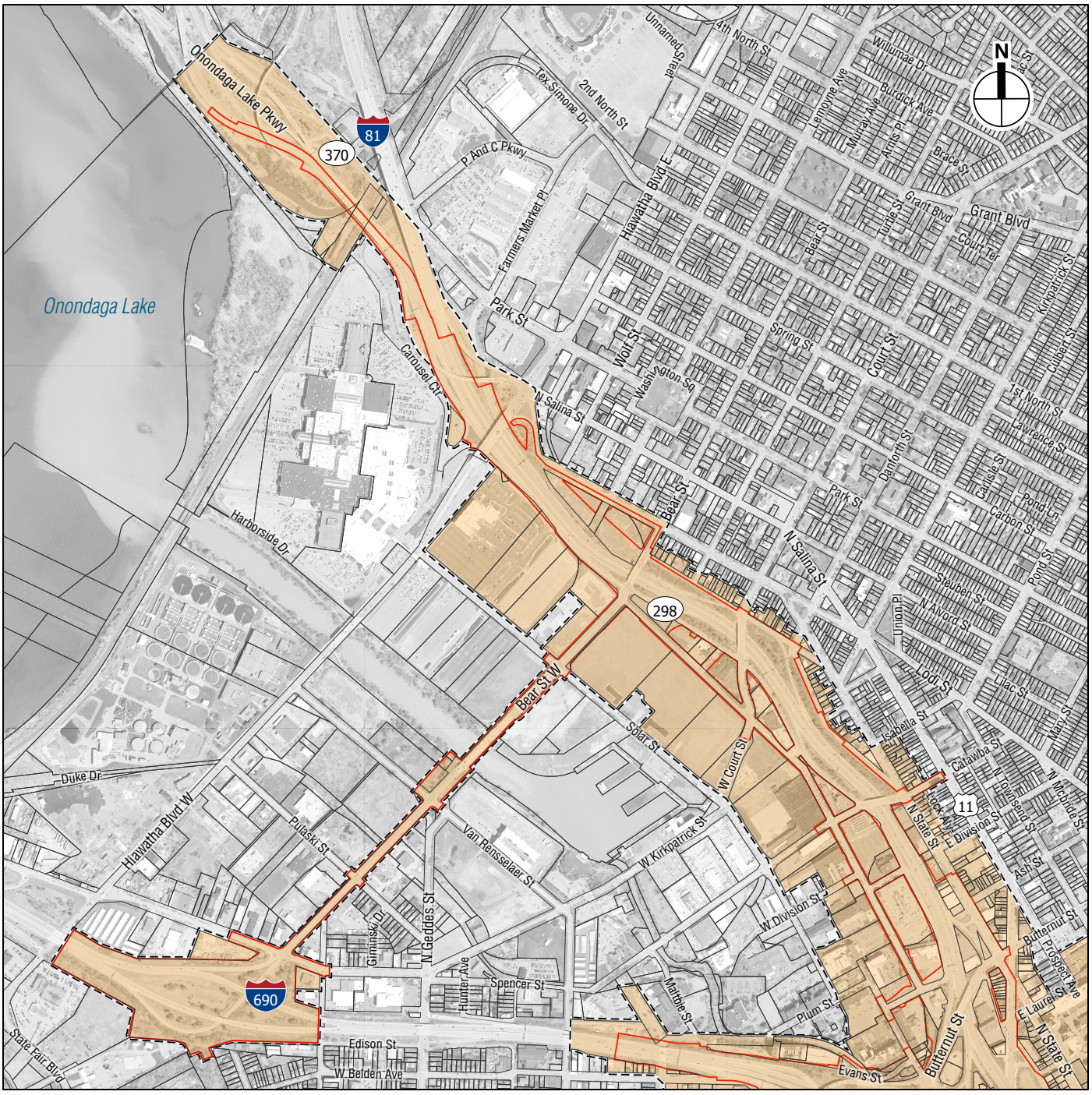
HOUSING VISIONS

BY: _____ DATE: 3/30/22

Benjamin Lockwood **President & CEO** MENT RELATIONS

APPENDIX 1:
Area of Potential Effects

09.10.2020



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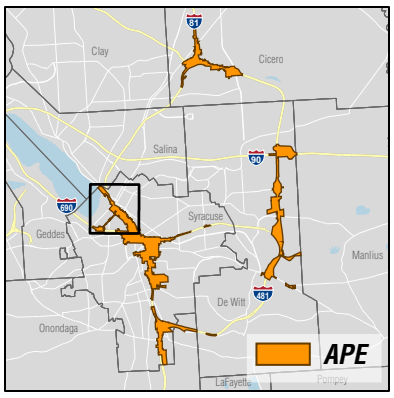
Area of Potential Effects (APE)

Limits of Disturbance (LOD), Combined Alternatives

Tax Parcels

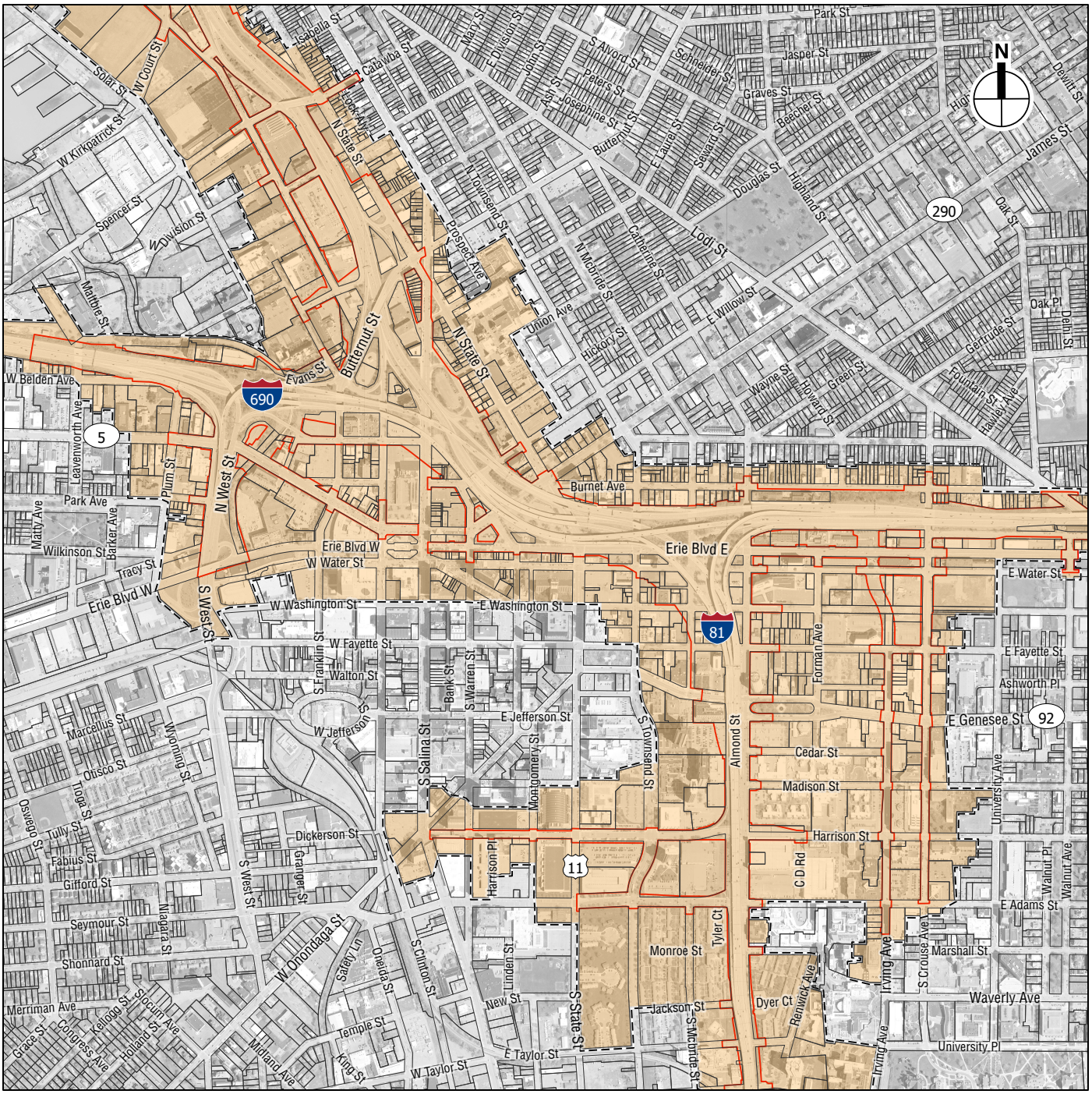


Area of Potential Effects (APE) - Central Study Area

I-81 Viaduct Project

Figure 1a

09.10.2020

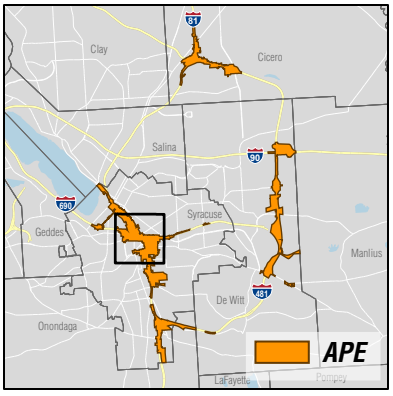


0 1 Mile

Area of Potential Effects (APE)

Limits of Disturbance (LOD), Combined Alternatives

Tax Parcels



Area of Potential Effects (APE) - Central Study Area

I-81 Viaduct Project

Figure 1b

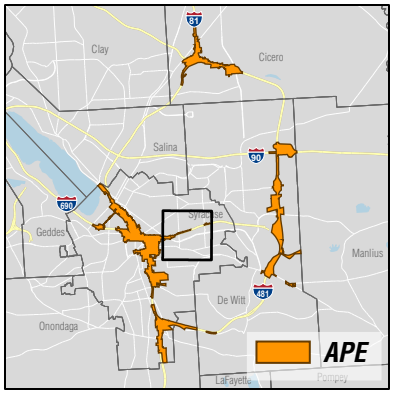
09.10.2020

0 1 Mile

Area of Potential Effects (APE)

Limits of Disturbance (LOD), Combined Alternatives

Tax Parcels

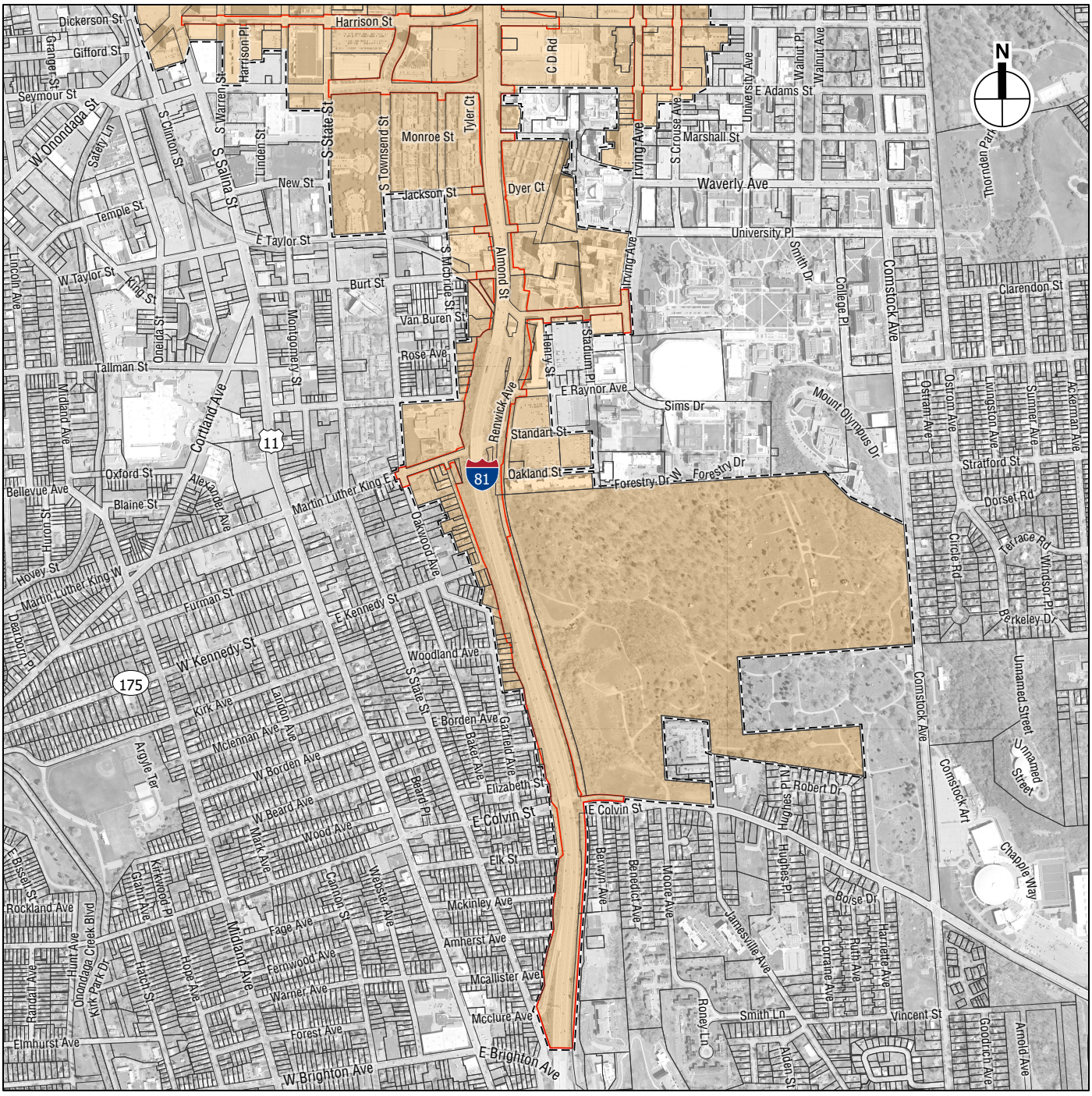


Area of Potential Effects (APE) - Central Study Area

I-81 Viaduct Project

Figure 1c

09.10.2020

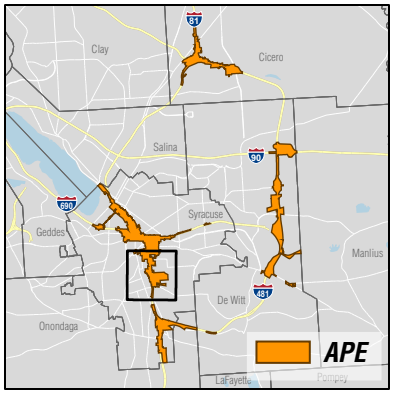


0 1 Mile

Area of Potential Effects (APE)

Limits of Disturbance (LOD), Combined Alternatives

Tax Parcels



Area of Potential Effects (APE) - Central Study Area

I-81 Viaduct Project

Figure 1d

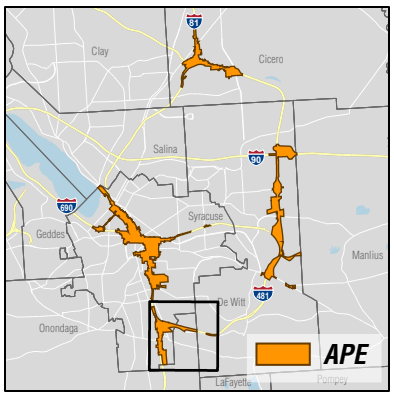
09.10.2020

0 1 Mile

Area of Potential Effects (APE)

Limits of Disturbance (LOD), Combined Alternatives

Tax Parcels



Area of Potential Effects (APE) - South Study Area

I-81 Viaduct Project

Figure 1e

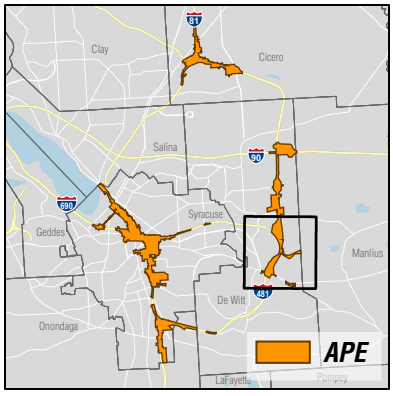
09.10.2020

0 1 Mile

Area of Potential Effects (APE)

Limits of Disturbance (LOD), Combined Alternatives

Tax Parcels

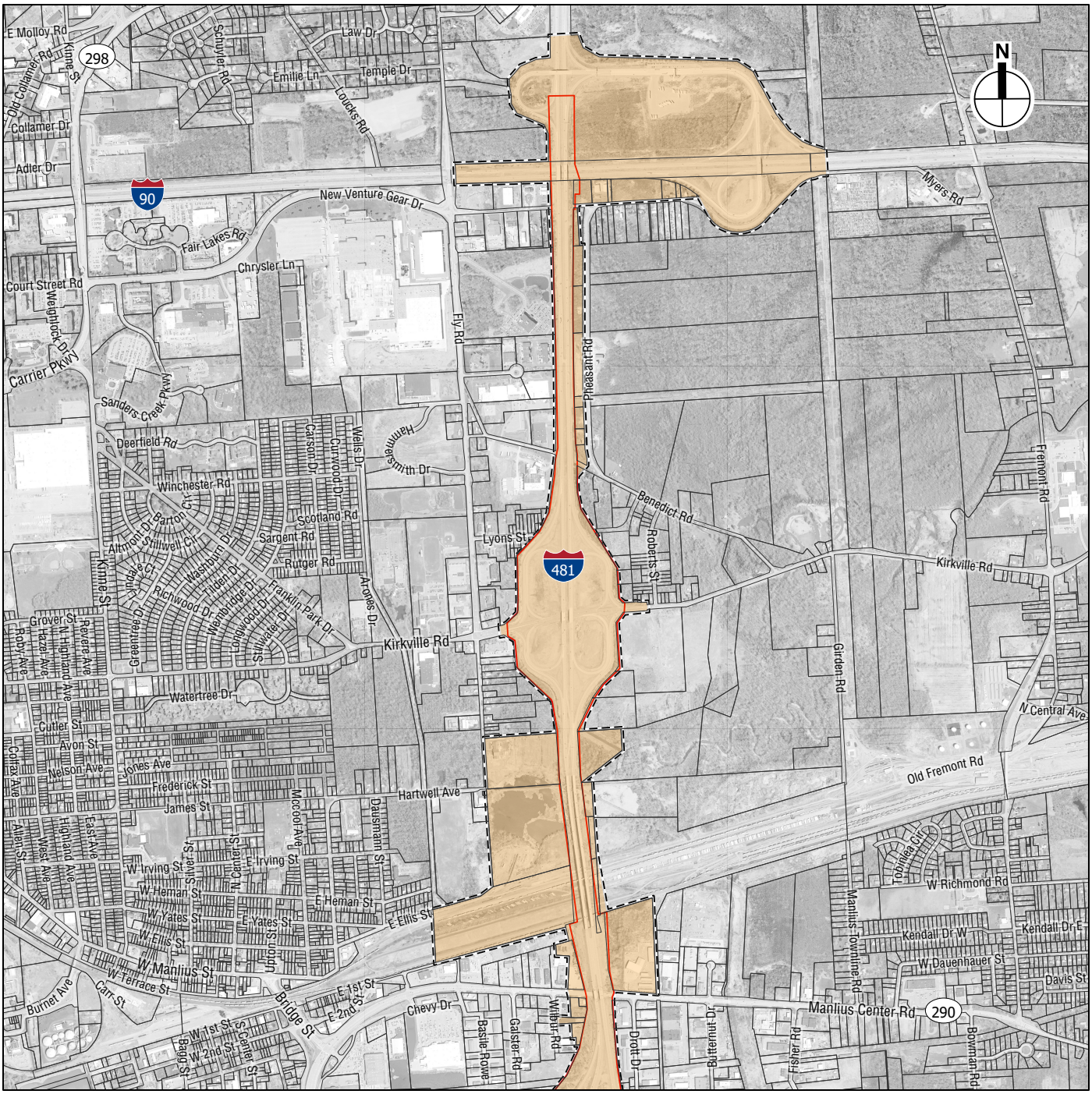


Area of Potential Effects (APE) - East Study Area

I-81 Viaduct Project

Figure 1f

09.10.2020

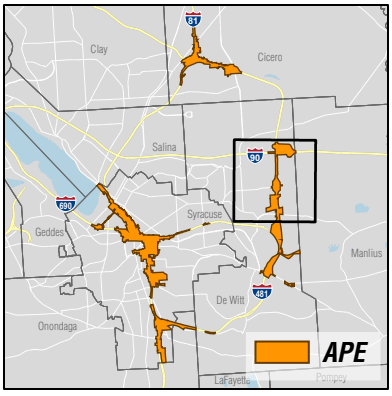


0 1 Mile

Area of Potential Effects (APE)

Limits of Disturbance (LOD), Combined Alternatives

Tax Parcels

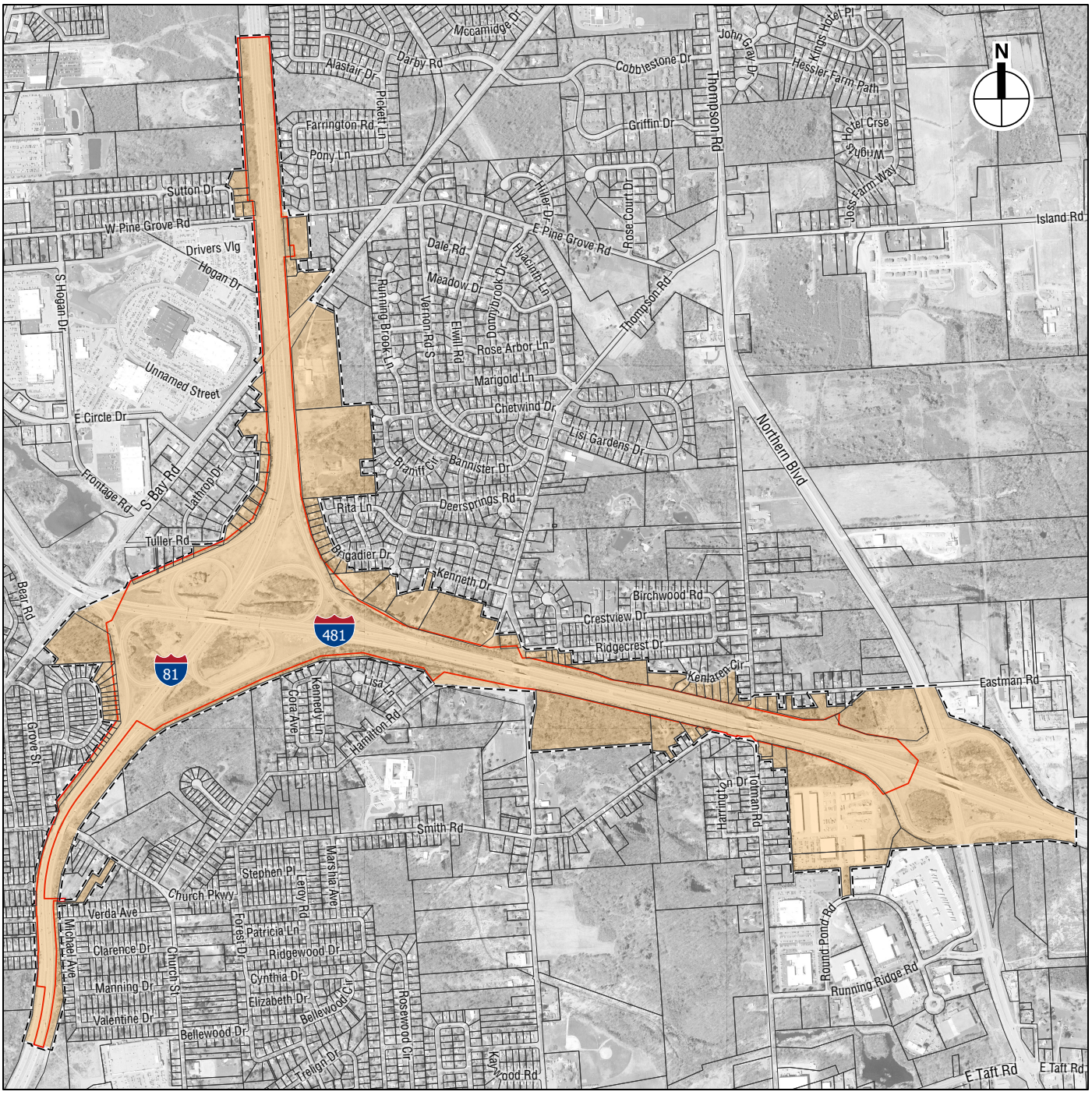


Area of Potential Effects (APE) - East Study Area

I-81 Viaduct Project

Figure 1g

09.10.2020

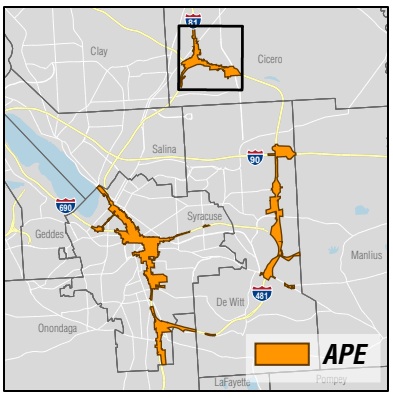


0 1 Mile

Area of Potential Effects (APE)

Limits of Disturbance (LOD), Combined Alternatives

Tax Parcels



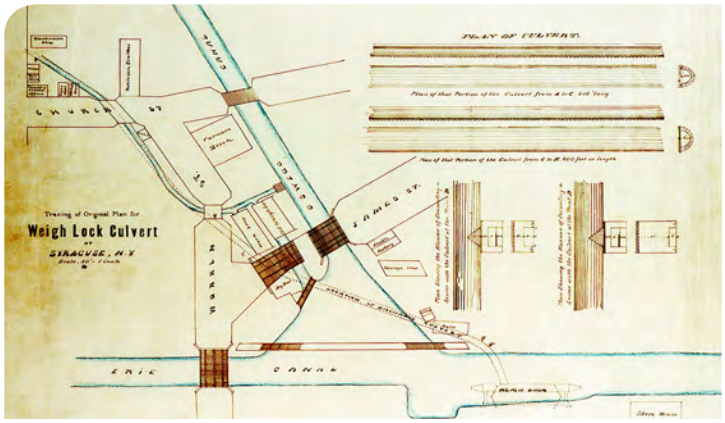
Area of Potential Effects (APE) - North Study Area

I-81 Viaduct Project

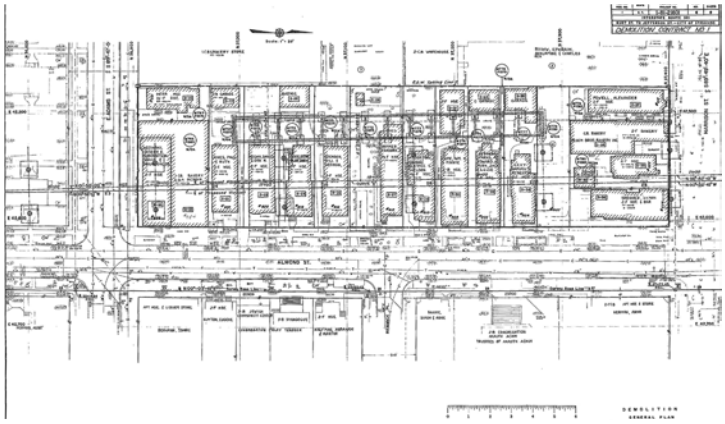
Figure 1h

APPENDIX 2:

Phase IB Archaeological Survey Work Plan: Plan for Phase IB Archaeological Survey and Archaeological Monitoring during Construction Including Data Recovery, October 2017







Phase 1B Archaeological Survey Work Plan

I-81 Viaduct Project

City of Syracuse and Towns of Salina, Cicero, and Dewitt, Onondaga County, New York

Prepared for:

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

U.S. Department of Transportation
Federal Highway Administration

Prepared by:

Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.

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edr

October 2017

Plan for Phase IB Archaeological Survey and Archaeological Monitoring During Construction Including Data Recovery

I-81 Viaduct Project

City of Syracuse and Towns of Salina, Cicero, and Dewitt, Onondaga County, New York

NYSDOT PIN 3501.60

Prepared for:

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

And

U. S. Department of Transportation
Federal Highway Administration

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Landscape Architecture, Engineering & Environmental Services, D.P.C.
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October 2017

MANAGEMENT SUMMARY

NYSDOT PIN:	3501.60
NYSORHP Project Review:	16PR06314
NYSDOT Project Type:	Highway demolition, reconstruction, and/or replacement
Cultural Resources Survey Type:	Plan for Phase IB Archaeological Survey and Archaeological Monitoring During Construction Including Data Recovery
Location Information:	City of Syracuse and Towns of Salina, Cicero, and Dewitt Onondaga County
Survey Area:	
Project Description:	Reconstruction of I-81 and adjacent roadways in Onondaga County, New York. The Project is considering 2 alternatives – a Viaduct Alternative and Community Grid Alternative, described herein.
:	Area of Potential Effect (APE) for Direct Effects totals 458.9 acres
USGS 7.5-Minute Quadrangle Map:	Syracuse East, Syracuse West, Jamesville, Cicero and South Onondaga
Authors/Institution:	Patrick J. Heaton, RPA and Nicholas Freeland, RPA *Environmental Design & Research, Landscape Architecture, Engineering, & Environmental Services, D.P.C. (EDR), Syracuse, New York*
Date:	October 2017
Sponsor:	New York State Department of Transportation Federal Highway Administration

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1.0 INTRODUCTION

This *Plan for Phase IB Archaeological Survey and Archaeological Monitoring During Construction Including Data Recovery* (or Phase IB Archaeological Work Plan) for the I-81 Viaduct Project (the Project) was developed and prepared by Environmental Design & Research, Landscape Architecture, Engineering, & Environmental Services, D.P.C. (EDR) on behalf of the New York State Department of Transportation (NYSDOT) in coordination with the Federal Highway Administration (FHWA), and in consultation with the New York State Historic Preservation Office (SHPO) and the Onondaga Nation. The I-81 Viaduct Project is located in the City of Syracuse and Towns of Salina, Cicero, and Dewitt, in Onondaga County, New York. This document presents a plan for Phase IB archaeological investigations and construction monitoring to be accomplished in advance of and concurrent with the construction of the Project.

The Phase IB Archaeological Work Plan describes methodologies for field investigations to identify archaeological resources within the Project's area of potential effects (APE), in accordance with 36 CFR Part 800.4(b). All fieldwork will be conducted in accordance with the New York Archaeological Council's (NYAC's) *Standards for Cultural Resources Investigations and the Curation of Archaeological Collections in New York* State (NYAC, 1994), the New York State Education Department's (NYSED's) *Work Scope Specifications for Cultural Resource Investigations on New York State Department of Transportation Projects* (NYSED, 2004), and the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*. The proposed work plan presented herein was prepared by archaeologists who satisfy the qualifications criteria per the Secretary of the Interior's Standards (36 CFR Part 61). Archaeological monitoring will also be conducted in accordance with NYAC's *Guidelines for the Use of Archaeological Monitoring as an Alternative to Other Field Techniques* (NYAC, 2002). All reports prepared in association with the Phase IB archaeological survey and/or archaeological monitoring will be consistent with the format and documentation standards of the NYSED Work Scope and the SHPO's *Phase I Archaeological Report Format Requirements* (2005).

1.1 Area of Potential Effect

The I-81 Viaduct Project includes the proposed reconstruction or replacement of the elevated portions of Interstate 81 (the I-81 Viaduct) through the City of Syracuse, in Onondaga County, New York. Two alternatives are currently being considered: the Viaduct Alternative and the Community Grid Alternative (Figure 1, Sheets 1 and 2). The Area of Potential Effect (APE) for the two project alternatives is described in detail in the Phase IA Archaeological Sensitivity Assessment (EDR, 2016) and the Draft Environmental Impact Statement (Draft EIS) (FHWA and NYSDOT, 2016). As defined in 36 CFR Part 800.16(d), the APE represents the geographical area within which the project "may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist," and defines the area in which identification efforts will occur for architectural and archaeological properties. The APE for the two Project alternatives carried forward for study in the Draft EIS was defined in consultation with the SHPO.

The project APE incorporates potential direct and indirect effects associated with the two build alternatives under consideration. Within the APE, a smaller area representing potential direct effects from physical alterations or ground disturbance associated with the project has been identified. This area, defined herein as the APE for Direct Effects, represents the limits of disturbance (LOD) of the two build alternatives and includes the area in which the proposed build alternatives have the potential to result in direct effects to archaeological resources (see Figure 1, Sheets 1 and 2). Changes to Project plans prior to or during construction would impact the APE which would necessarily impact the Phase IB archaeological survey and construction monitoring work plan. Therefore, any changes to Project plans need to be communicated to the archaeological consultant as quickly as possible.

1.2 Vertical Limits of Disturbance

Subsequent to completing the Phase IA report, the project design for both alternatives has continued to advance and additional detail is now available regarding the potential depth of soil disturbance for proposed work under each alternative. The anticipated depth of soil disturbance for each alternative based on preliminary/conceptual design information is shown on Figure 2 (Sheets 1 and 2). The potential depth of soil disturbance shown on Figure 2 is based on estimates by the design engineering team, based on currently available information. All areas within the APE for Direct Effects were first designated as having the potential for disturbance to a minimum depth of 0 to 2 feet (0 to 61 cm) below the ground surface. Using the preliminary project plans for each alternative, the design engineer delineated approximated areas within the APE for Direct Effects of each project Alternative where planned construction and/or demolition was expected to require soil disturbance beyond a depth of 2 feet (61 cm) to facilitate construction and/or relocation of underground utilities, sewers, bridge supports, and new highway right-of-way. In each of these areas, where possible, the estimated depth of anticipated disturbance was delineated. Anticipated depths of disturbance were not mapped for those areas characterized by previous cut and fill disturbance from the original construction of existing highway structures and embankments because, as described in the Phase IA report, the vertical depth of disturbance associated with the original highway construction was extensive and the proposed depth of construction is not expected to extend beyond the depth of previously disturbed soils into potential underlying natural subsoils (see EDR, 2016: Figures 2.4.6-13 and 2.6.3-1). Therefore, there is no possibility of intact buried archaeological materials existing at the locations mapped as “Cut and Fill Highway and Embankment Areas” on Figures 2 and 4.

2.0 ARCHAEOLOGICAL SENSITIVITY

2.1 Summary of the Phase IA Archaeological Sensitivity Assessment

A Phase IA Archaeological Sensitivity Assessment for the APE was completed in September 2016 (EDR, 2016). The purpose of the Phase IA Archaeological Sensitivity Assessment was to determine whether previously identified archaeological resources are located within the APE, and to evaluate the potential for previously unidentified archaeological resources to be located within the APE. The Phase IA study was conducted in accordance with established standards, including the NYAC *Standards for Cultural Resources Investigations and the Curation of Archaeological Collections in New York State* (NYAC, 1994), the New York State Education Department's (NYSED) *Cultural Resources Survey Program Work Scope Specifications for Cultural Resources Investigations on New York State Department of Transportation Projects* (NYSED, 2004), and the SHPO's *Phase I Archaeological Report Format Requirements* (NYSOPRHP, 2005).

The results of the archaeological sensitivity assessment presented in the Phase IA report are summarized below and depicted in Figure 3, Sheets 1 and 2, in addition to the supplemental analysis of areas with the potential to contain Native American human remains (described below). The Phase IA archaeological sensitivity assessment for the Project (EDR, 2016) was submitted by NYSDOT and FHWA to SHPO for review in September 2016. The Phase IA report (EDR, 2016:234) concluded: "…due to the extent of prior ground disturbance, the potential for archaeological sites to be present within the APE for Direct Effects is highly variable…The Phase1B archaeological survey will include different field methodologies depending on the existing conditions present within various portions of the APE for Direct Effects." The Phase IA report concluded that a Phase IB archaeological survey would be needed to determine if intact archaeological resources are present within the APE for Direct Effects, and further recommended the development of an archaeological Work Plan to identify the locations and field methodologies for the Phase IB survey.

The Phase IA Archaeological Sensitivity Assessment was completed in consultation with the SHPO and the Onondaga Nation, and the report was provided for their review in advance of developing a scope of work for Phase IB archaeological survey. The SHPO concurred with the recommendation for Phase IB testing in a letter dated September 22, 2016 in which it stated: "we concur with your agency's recommendation to FHWA. We have no issues or concerns with the Phase IB archaeology testing and reporting recommendations provided on pages 234 and 235 of the Phase IA Report" (Bonafide, 2016).

On October 7, 2016, FHWA, NYSDOT, SHPO, and the Onondaga Nation met to discuss the Phase IA Archaeological Sensitivity Assessment. Following this meeting, in a letter to the NYSDOT dated November 14, 2016, the Onondaga Nation provided comments on the Phase IA report. Additional comments were provided in a March 1, 2017 letter from

the Onondaga Nation to the FHWA, based on review of the pre-Draft EIS. Comments provided by FHWA and the Onondaga Nation during the October 7, 2016 meeting and in subsequent correspondence included requests for additional information regarding the vertical APE, mapping, proposed methods of investigation, and procedures in the event that human remains are encountered during construction. Following the completion of the Phase IA report (EDR, 2016), the Onondaga Nation requested that the historic alignment of Onondaga Creek be more clearly delineated, due to the elevated sensitivity for human burials in proximity to the historic watercourse. Information prepared in response to these requests has been included in this Phase IB Work Plan and are discussed in more detail below in Section 2.4 of this report.

The Phase IA report relies on background data and historical information specific to the project setting to assess the likelihood that archaeological resources are located in the APE. This includes detailed historic context narratives for the long period of Pre-Contact Native American settlement and use of the APE and vicinity, as well as descriptions of the settlement and development of the APE during the Historic Period. This site-specific historic context provides a foundation for the identification and evaluation of potential archaeological resources in accordance with the requirements of Section 106.

The archaeological sensitivity assessment in the Phase IA report evaluates the potential for archaeological deposits to be located within the APE based on analysis of the following information:

- The environmental setting, geology, and soils within the APE and vicinity;
- Existing conditions within the APE, based on reconnaissance-level site visits and illustrated with representative photographs;
- The locations of previously identified archaeological sites located within and adjacent to the APE;
- The results of previous archaeological surveys and investigations within and adjacent to the APE;
- Historical research and the results of historic map review; and,

There are 14 previously recorded archaeological sites within or adjacent to the APE for Direct Effects. These include eight historic-period sites and six Pre-Contact Native American sites. The Historic Period sites consist of six historic structural remains (these include intact foundations and middens/debris scatters associated with historically map-documented structures [including the Syracuse Armory]) and one Erie Canal boat basin. The Pre-Contact Native American sites consist of two villages/hamlets, two artifact scatters/traces of occupation, one camp site, and one site described as a “camp or hamlet” (Parker, 1922:647). Therefore, Historic Period archaeological sites expected to be encountered during the Phase IB survey include artifact scatters, structural remains including foundations and ancillary features such as privies and wells, and canal-related features including canal prisms, boat basins, and locks. To account for this, the Phase 1B archaeological survey strategy targets the mapped alignment of the Erie and Oswego Canals for

machine-aided testing and construction monitoring and targets historically map-documented structure locations for machine-aided testing. Pre-Contact Native American archaeological sites could range from small camps and scattered artifacts to major village sites and it is also anticipated that Pre-Contact human remains could potentially be encountered. Smaller camps and isolated artifacts could be located in any previously undisturbed portions of the APE but larger camps and village sites are likely to be located near Onondaga Lake or the former course of Onondaga Creek. Therefore, Phase IB archaeological survey will target previously undisturbed areas with shovel testing and the former alignment of Onondaga Creek (based on georeferenced historic maps) with machine-aided testing. The extent and nature of proposed Phase IB archaeological survey and archaeological monitoring are discussed in detail below in Sections 3 and 4 of this report.

The Phase IA report also includes documentation of the horizontal and vertical extent of prior ground disturbance within the APE, which affects the integrity of potential archaeological resources. The next steps in the phased approach to the identification of archaeological resources are to review the proposed locations of ground disturbance for the project and identify potential Phase IB archaeological testing methods (such as shovel testing, machine-aided excavation, and/or archaeological monitoring) that will be used in archaeologically sensitive areas where the proposed depth of ground disturbance exceeds the depth of existing ground disturbance.

The APE is primarily within a very developed urban area with a complicated history of prior ground disturbance that affects the integrity of potential archaeological deposits. Sources of previous ground disturbance within the APE for Direct Effects include land filling activities associated with nineteenth-century urban development in the City of Syracuse; demolition and construction associated with mid-twentieth century highway construction; disturbance associated with construction, expansion, or modification of buildings; areas of cut and fill associated with road and highway construction; and installation of underground utilities. The Phase IA report documents the extent of previous ground disturbance within the APE. This analysis includes consideration of mapped soils, buried utilities, demolished structures (as determined by geo-referencing historic maps and NYSDOT demolition/construction plans), GIS analysis of 955 soil borings to estimate depth of fill/disturbed soils within the APE, and identification of highway cut and fill embankment areas based on review of NYSDOT demolition and construction plans, aerial imagery (including oblique views and historical imagery), and field reconnaissance/confirmation.

2.2 Pre-Contact/Native American Archaeological Sensitivity within the APE

Potential Pre-Contact Native American archaeological sites within the APE would necessarily pre-date the significant filling and engineering of the landscape that took place as part of the development of the City of Syracuse throughout the nineteenth and twentieth centuries. Therefore, potential Native American archaeological sites are anticipated to be located only in areas with undisturbed soils. As described in the Phase IA report, approximately 19.1 acres within the

APE for Direct Effects are undisturbed, or disturbance cannot be documented, and therefore potentially sensitive for Pre-Contact Native American archaeological resources.

Prehistoric Native American site types that could be expected to occur within the APE include:

- Small campsites dating to the Paleoindian, Early Archaic, and/or Middle Archaic Periods. These sites could be expected to contain primarily chipped stone tools and debitage with potentially some bone or ivory tools. Features could include hearths and post-molds.
- Large residential campsites dating to the Late Archaic, Early Woodland, and/or Middle Woodland Periods. These sites could be expected to include large quantities of chipped stone tools and debitage, ground stone tools and net weights, bone tools, ceramic vessels and vessel fragments, steatite vessels and vessel fragments, ceramic and bone decorative items, and exotic goods such as marine shells and copper. Features could include hearths, post-molds, middens, and human burials.
- Large nucleated villages dating to the Late Woodland Period. These sites could be expected to include large quantities of chipped stone tools and debitage, ground stone tools, bone tools, ceramic vessels and vessel fragments, ceramic and bone decorative items, and exotic goods such as marine shells and copper. Features could include hearths, storage pits, post molds associated with both longhouses and palisade walls, extensive middens, and human burials.
- Small resource acquisition campsites dating to the Late Archaic, Early Woodland, Middle Woodland, and/or Late Woodland Periods. These sites could be expected to include small quantities of chipped stone tools, ground stone tools and net weights, bone tools, ceramic vessels and vessel fragments, and/or steatite vessels and vessel fragments. Features would likely be restricted to small hearths at these locations.
- Isolated artifacts such as projectile points, other tools, ceramic fragments, or lithic debitage with no associated features.
- Burial sites – the potential for Pre-Contact Native American human remains and/or burial sites to be located within the APE is discussed in Section 2.4 of this report.

2.3 Historic-Period Archaeological Sensitivity within the APE

As described in the Phase IA report, the construction of Interstates 81 and 690 through Syracuse required demolition of large portions of city neighborhoods including much of the Fifteenth Ward, which was home to the highest concentration of African-American and Jewish populations in the city (Stamps and Stamps, 2008; Ducre, 2012). It is estimated that 800-900 families were displaced by the construction of highways in the Fifteenth Ward (Knight, 2007). Areas that were demolished included 103 acres of land in four contiguous census tracts that were predominately African-American and poor. Many residences, dozens of African-American-owned businesses, and nearly all of the

African-American churches in the city were destroyed (Stamps and Stamps, 2008). It is anticipated that archaeological features and deposits associated with these residential and commercial properties, as well as archaeological features and artifacts associated with earlier nineteenth and twentieth-century occupants, are located throughout the APE for Direct Effects. Potential historic-period archaeological resources in the APE include sites and features related to the Erie and Oswego Canals; large-scale commercial, industrial, and institutional sites; residential and small-scale commercial sites; and military sites (although none of the latter are known to be located within the project limits).

As described in and shown on maps included in the Phase IA report, hundreds of former structures are depicted on historic maps within the APE for Direct Effects. These are located throughout the APE in areas that are currently characterized as previously disturbed land with fill deposits of varying depths. It is anticipated that cellars and/or foundation remains associated with demolished structures may be present within the APE for Direct Effects at varying depths below the current ground surface (depending on local conditions). The foundations or structural remains unto themselves are unlikely to be considered archaeologically or historically significant, in large part because the location, dimensions, and arrangement of those buildings can be well understood based on review of historic cartographic sources and archaeological data is unlikely to contribute significant new information. Therefore, although these structural (foundation) remains are potentially ubiquitous throughout the APE for Direct Effects, it is assumed that archaeological investigation of these features is unlikely to contribute significant, meaningful new information.

However, potential artifact deposits and shaft features, which include privies, wells, and cisterns, are found on many domestic and commercial properties in urban contexts and are potentially located in former yard areas adjacent to the former locations of map-documented structures. In addition to their primary functions, these features were used as disposal pits for household refuse both during and at the end of their use life (Wheeler, 2000). These features are in general robustly constructed with wood, brick, and stone, and because they are underground they are likely to remain behind when the domestic or commercial structure they served is demolished or otherwise destroyed (Heck and Balicki, 1998; Roberts and Barrett, 1984; Stottman, 2000). Unlike open trash heaps which are subject to disturbance from plowing, demolition, and other actions, shaft features were typically abandoned and sealed or covered in place at the end of the feature's useful life (typically by having any remaining empty shaft space below the ground surface filled with soil, gravel, and/or debris), preventing later disturbances to the artifacts dumped inside. This enables tighter dating of sites through the glass and ceramics that are frequently recovered from them. In many instances, artifact assemblages from sealed shaft features can be associated with specific time periods and/or historically documented occupants of a given site. Therefore, shaft features have the potential to address specific historical and archaeological research questions, and therefore have the potential to be considered significant (Carnes-McNaughton and Harper, 2000; Geismar, 1993; McCarthy and Ward, 2000; Stottman, 2000; Wheeler, 2000).

2.4 Potential for Human Remains within the APE

Based on the results of the research conducted as part of the Phase IA Archaeological Sensitivity Assessment and through consultation with the Onondaga Nation, there is a potential for human remains to be located (or to be formerly located) within the APE. Historical accounts describe Native American human remains that were disturbed during nineteenth-century construction activities near Onondaga Creek and Genesee Street, which may be located within or adjacent to the APE. In addition, three historic-period cemeteries (one of these is the former site of a relocated cemetery) are located adjacent to (but outside) the APE. These include the National Register of Historic Places–(NRHP-) listed Oakwood Cemetery, the former site of Old St. Mary's Cemetery, and the House Family Cemetery. No disturbance to any of these three cemeteries is anticipated as part of the project.

As noted above, the Onondaga Nation had requested that the historic alignment of Onondaga Creek be further clarified. The Onondaga Nation noted that all areas along the historic alignment of Onondaga Creek and any additional areas near historic water sources should be considered sensitive for the potential to contain human burials. To address these concerns, the mapped extent and path of watercourses within the APE for Direct Effects were digitized and included in GIS mapping for the project. Historic maps from 1827, 1834, 1852, 1859, 1874, and 1938-1943 were digitally georeferenced using GIS software. All watercourses depicted on those maps within or immediately adjacent to the APE were traced, and buffered by 50 feet (15 meters) to account for uncertainty in the original cartographic depiction of watercourses and/or potential geo-referencing errors. The mapped former locations of these waterbodies are depicted on Figure 4 and represent areas that are considered archaeologically sensitive due to potential for buried human remains. It should be noted that the historic alignment of these water courses is also considered archaeologically sensitive for Pre-Contact Native American resources other than human burials as well as Historic Period structures.

3.0 PROPOSED PHASE IB ARCHAEOLOGICAL SURVEY METHODOLOGIES

As described in the Phase IA report (EDR, 2016) the appropriate methods for Phase IB archaeological investigations within the APE are variable and dependent on the archaeological sensitivity of different portions of the APE, the extent of prior ground disturbance, the anticipated depth of soil disturbance (see Figure 2, Sheets 1 and 2), and logistical considerations associated with the existing land uses and timing of construction activities throughout the APE. The potential need for Phase IB archaeological investigations (as described in the Phase IA report) is summarized as follows:

- Cut-and-Fill Highway and Embankment Areas: these are shown on Figures 2 and 3 and include areas within and adjacent to the APE for Direct Effects in which substantial cutting and filling of sediment has occurred related to highway construction. These include areas where the Interstate is elevated above the surrounding terrain on an earthen berm, areas where the Interstate has been excavated below the natural ground surface, areas where exit and entrance ramps are supported by concrete retaining walls or earthen berms, and other similar circumstances these areas are severely disturbed to such an extent that there is no potential for intact archaeological resources to be present. As recommended in the Phase IA report (EDR, 2016), no Phase IB archaeological investigation or further consideration of these areas (relative to the archaeological resources) is planned. It is important to note that although these areas may also be paved, they are distinct from the paved areas described below because their predominant characteristic is significant cut and/or fill disturbance. It should be noted that most of the I-81/I-481 Northern Interchange, the I-481 Eastern Improvements, and the I-81/I-481 Southern Interchange occur within Cut-and-Fill Highway and Embankment Areas.
- Unpaved areas and/or areas where significant fill deposits are not documented or anticipated: these consist of apparently undisturbed areas, primarily within or adjacent to Interstate rights-of-way (ROWs). These areas are shown on Figure 4 as areas of potential "Native American Archaeological Sensitivity." In these areas, the Phase IB survey will include a systematic program of shovel testing conducted in accordance with applicable guidelines (see Figure 5).
- Paved and/or previously disturbed areas where the proposed depth of construction activities is anticipated to be relatively minimal (i.e., within 2 feet [61 cm] of the existing ground surface): Areas where the anticipated depth of soil disturbance is anticipated to be less than 2 feet (61 cm) are shown on Figure 2. In these areas, no Phase IB archaeological investigations are planned. This would include areas where construction activities are limited to road re-surfacing or minor widening, curb replacements, streetscape improvements, and similar small-scale activities.

- Paved and/or previously disturbed areas where the proposed depth of construction activities is anticipated to be significant (i.e., greater than 2 feet [61 cm] below existing grade or otherwise involve large amounts of ground disturbance): Areas where the depth of soil disturbance is anticipated to be greater than 2 feet [61 cm] are shown on Figure 2. These will primarily consist of vacant lots, green spaces, and parking lots. In these areas, the Phase IB archaeological survey will include machine-aided archaeological investigations (see Figure 5) to determine if potentially significant archaeological deposits are present beneath fill deposits. A sampling strategy that identifies specific locations for proposed archaeological investigations is presented below in Section 3.1.2. This sampling strategy prioritizes areas where there is a potential for human remains to be present and provides for a representative assessment of the potential for the various types of historic-period archaeological resources that may be located within the APE for Direct Effects.
- Existing public roadways where the proposed depth of construction activities is anticipated to be significant (i.e., greater than 2 feet [61 cm] below existing grade or otherwise involve large amounts of ground disturbance) and where there is a potential for significant (i.e., NRHP-eligible) archaeological resources to be located (i.e., Erie and Oswego-Canal related resources): The locations of canal-related resources within the APE are shown on Figure 3. These areas are for the most part within existing roadways where machine-aided Phase IB testing would not be feasible due to the traffic stoppages it would cause. In these areas, on-site archaeological monitoring during construction is planned to document the presence or absence of potentially significant features. A monitoring protocol is included in Section 3.1.3 of this work plan.

NYSDOT will coordinate with the Onondaga Nation to provide opportunities for a Nation Representative to be present during Phase IB shovel testing, machine-aided testing, and archaeological monitoring during construction of the Project.

3.1 Phase IB Archaeological Field Methods

Proposed field methods for the Phase IB archaeological survey for the Project include shovel testing, machine-aided excavation, and archaeological monitoring during construction. Each of these methods is described below and the locations where the various methods are planned are depicted on Figure 5, Sheets 1 and 2. The Phase IB archaeological investigations will be carried out prior to the start of construction, to the extent possible, in those areas where shovel testing and machine-aided excavation are proposed.

- Shovel tests will be excavated in unpaved areas and/or areas where significant fill deposits are not documented or anticipated.

- Mechanized excavation/machine-aided archaeological testing will be employed in a representative sample of paved and/or previously disturbed areas where the proposed depth of construction activities is anticipated to be significant (i.e., greater than 2 feet [61 cm] below existing grade, or otherwise involve large amounts of ground disturbance). This work will be carried out in advance of the Project's construction activities, to the extent possible.
- Archaeological monitoring during construction will be employed in existing public roadways where the proposed depth of construction activities is anticipated to be greater than 2 feet [61 cm] below existing grade or otherwise involve large amounts of ground disturbance, and where there is a potential for significant archaeological resources to be located (i.e., Erie and Oswego-Canal related resources).

Some combination of these Phase IB field methods (further described below) will be used regardless of which Alternative (i.e., the Viaduct Alternative or the Community Grid Alternative) is selected. If any archaeological sites are identified, the site's eligibility will be assessed in terms of NRHP Criteria for Evaluation as discussed in the Phase IA report (EDR, 2016). If possible, NRHP eligibility (site significance) will be assessed based on the results of the Phase IB survey; however, Phase II investigations are typically required to fully evaluate NRHP eligibility at most archaeological sites. If, following Phase IB archaeological survey fieldwork, it is determined that Phase II investigations are necessary at one or more sites, the archaeological consultant will develop a Phase II work plan for the site or sites in questions for review by NYSDOT. It is anticipated that the preparation of a Phase II work plan will take no more than five days per site. It is also anticipated that, for most sites, Phase II investigations could be concluded within 20 days of approval of the Phase II work plan by NYSDOT.

In the event that potential human remains and/or funerary objects associated with human remains are identified during Phase IB archaeological survey, all work in the immediate vicinity will stop and the NYSDOT cultural resources lead for the Project will be contacted. All applicable procedures outlined in the SHPO Human Remains Discovery Protocol (NYSOPRHP, 2015) (Appendix A), the Haudenosaunee Human Remains Protocol (Grand Council of the Haudenosaunee, 2002) (Appendix B), and the NYSDOT *Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction* (Appendix C) will be followed. If human remains or funerary objects directly associated with human remains are encountered, the appropriate treatment will be determined through consultation as described in these procedures.

In some cases, Phase III data recovery/mitigation may be appropriate at sites determined to be eligible for listing on the NRHP as a result of Phase IB survey and/or Phase II investigations. Based on consultation with the Onondaga Nation, Data Recovery would not be considered an appropriate treatment for any Native American burial site, human

resources, a Phase III data recovery plan will be developed by the archaeological consultant for review by NYSDOT, SHPO, FHWA, and also by the Onondaga Nation for sites determined to be Native American.

It is anticipated that the preparation of a Phase III data recovery plan will take no more than 15 days per site. It is also anticipated that, for most sites, Phase III data recovery could be completed within 35 days of approval of the Phase III data recovery plan by NYSDOT. For both Phase II and Phase III investigations, an end-of-field (EOF) letter will be prepared and submitted to NYSDOT within five days of the conclusion of fieldwork. The EOF will summarize the preliminary results of the investigations, make recommendations for further work (or lack thereof), and present a time frame for the completion of a full Phase II or Phase III report. It should be noted that the above time frame assumes only one archaeological site will be investigated at a time. If multiple sites need to be investigated concurrently by a single archaeological consultant, the process will likely take longer. It should be noted that the methodologies and timelines discussed above apply only to data recovery that results from Phase IB archaeological survey. Data recovery that occurs as a result of archaeological monitoring is discussed below in Section 4.0 of the work plan.

Each field methodology is discussed in detail below.

3.1.1 Shovel Testing

Areas where shovel testing is recommended are depicted on Figure 5. Shovel tests will be excavated in unpaved areas where extensive previous disturbance is not documented or anticipated and where the depth of fill deposits, if present, is unlikely to exceed the practical limits of hand excavation. Shovel tests will be excavated at 50-foot (approximately 15-meter) intervals in all unpaved/undisturbed portions of the APE for Direct Effects. Shovel tests will be approximately 12-20 inches (30-50 cm) in diameter and excavated to a depth of at least 4 inches (10 cm) into the subsoil stratum or to the limits of practical hand excavation. The locations of all shovel tests will be recorded with professional-grade GPS equipment and noted on field maps. Stratigraphic profiles, including depth, soil color, and texture, for all shovel tests will be recorded on standardized field record sheets. A complete tabulation of the stratigraphy encountered in all shovel tests will be included as an appendix to the Phase IB report.

If Pre-Contact Native American artifacts are recovered from a shovel test, archaeologists will excavate additional "radial" shovel tests per the SHPO's Phase I *Archaeological Report Format Requirements* (NYSOPRHP, 2005). The SHPO guidance indicates when Pre-Contact Native American artifacts are recovered from an isolated shovel test, up to 8 additional shovel tests should be excavated at 1- and 3-meter intervals around the original positive shovel test to determine whether the artifacts present represent an isolated find or may indicate the presence of an archaeological site. If historic artifacts are encountered in a shovel test or if shovel tests are being excavated in an area of high historic

archaeological sensitivity (e.g. near a map-documented structure), shovel tests may be excavated at 25-foot (7.5-meter) intervals.

As described previously, if potential human remains and/or funerary objects associated with human remains are identified during shovel testing, all work in the immediate vicinity will stop and the NYSDOT cultural resources lead for the Project will be contacted. All applicable procedures outlined in the SHPO Human Remains Discovery Protocol (NYSOPRHP, 2015) (Appendix A), the Haudenosaunee Human Remains Protocol (Grand Council of the Haudenosaunee, 2002) (Appendix B), and the NYSDOT *Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction* (Appendix C) will be followed.

All soils excavated from shovel tests will be screened through 0.25-inch hardware cloth. The presence of clearly modern materials, such as plastic fragments, modern bottle glass fragments, or twentieth-century architectural materials, in shovel tests will be noted on field forms but these materials will not be collected for subsequent analysis. Per standard archaeological field protocol, Pre-Contact Native American and historic-period artifacts recovered from shovel tests will be placed in plastic bags labeled with standard provenience information.

As depicted on Figure 5, shovel testing is recommended at the following locations:

- Viaduct Alternative (Figure 5, Sheet 1)
    - Apparently undisturbed areas at the southern end of the Viaduct Priority Area on either side of the I-81 ROW.
- Community Grid Alternative (Figure 5, Sheet 2)
    - Apparently undisturbed area along north side of I-81/I-481 Northern Interchange Area.
    - Apparently undisturbed areas at the southern end of the Viaduct Priority Area on either side of the I-81 ROW.
    - Apparently undisturbed at the northern and southern ends of the I-81/I-481 Southern Interchange.

3.1.2 Machine-Aided Archaeological Testing

To determine whether potentially significant archaeological deposits or features are present in areas within the APE containing evidence of previous disturbance , machine-aided archaeological testing will be conducted at selected locations within the APE to provide a representative sample of potential archaeological resources. Testing is necessary in these areas due to the potential for intact archaeological deposits to exist under a layer of disturbed fill (e.g., in the case of filled structural foundations). Under the direction of a professional archaeologist (i.e., an archaeologist who satisfies the qualifications criteria per the Secretary of the Interior's Professional Qualifications Standards [36 CFR Part

61]), test trenches will be excavated within selected locations to determine if potentially significant archaeological resources are present. A backhoe will be used to remove overburden including pavement, sidewalks, gravel ballast or fill underneath pavement, and obvious artificial fill encountered in utility trenches or other contexts, and excavate test trenches in a sample of areas within the APE.

Specific areas recommended for machine-aided testing are discussed in detail below and depicted on Figure 5. These areas were selected to specifically target the historic alignment of Onondaga Creek, which, as previously noted, is sensitive for human burials, Pre-Contact Native American cultural material, and Historic Period structures. Additionally, the machine-aided testing will target the locations of Historic Period commercial facilities located along the Erie and/or Oswego Canals and Historic Period residences along Almond Street.

Based on the results of previously conducted Phase I machine-aided archaeological testing within the City of Syracuse (e.g., Panamerican Consultants, Inc., 2000; Hartgen Archaeological Associates [HAA], 2001a; HAA, 2001b; HAA 2001c; HAA, 2003a; HAA, 2003b), it is anticipated that trenches will be excavated to a depth of approximately 3.5 feet (1.1 meters) to 7 feet (2.1 meters) below the modern ground surface. However, trenches will be terminated at the proposed depth of disturbance for the Project, upon encounter of an archaeological feature (so as not to damage the feature), 10 cm (approximately 4 inches) or more into sterile natural subsoil, or at standing water.

Under guidance from archaeologists, equipment operators will remove sediment and fill in horizontal levels by stratigraphic unit. Archaeologists will screen one sample of soil from each layer removed (excluding demolition rubble or materials such as asphalt and concrete) per 7.5 meters of linear trench. All samples will be screened through 0.25-inch hardware mesh. Archaeological artifacts will be collected for further analysis and clearly modern or highly fragmented historic materials removed from fill contexts will be noted but not collected. The presence of clearly modern materials, such as plastic fragments, modern bottle glass fragments, or twentieth-century architectural materials, in trench profiles or fill deposits will be noted but these materials will not be collected for subsequent analysis. If intact natural soil horizons are exposed within a backhoe trench, excavation will proceed either mechanically, or by hand depending on the accessibility of the natural horizon. Field archaeologists will record (draw and photograph) stratigraphic profiles of trench walls (including features, if present) and plan view maps of trench bases. The corner points of all test trenches and any identified archaeological features will be recorded with survey-grade GPS equipment.

If a potential archaeological feature is exposed, all mechanized excavation will cease and archaeologists will enter the open trench to further inspect the feature[1]. In cases where the depth of the open trench exceeds 4 feet (1.2 meters),

the trench walls will be shored up by construction personnel prior to the archaeologist entering the trench, in compliance with pertinent OSHA regulations (OHSA, 2015). Prior to the installation of shoring, the stratigraphy in the upper portions of the walls, which will be obscured by shoring, will be recorded. Shoring must be installed in such a way as to minimize impacts to cultural material in the bottom of the trench. The feature will be cleaned and further exposed via hand excavation. All exposed features will be photographed, measured and described in detailed field notes. If appropriate, a sample of sediment from the feature will be collected for further analysis. If the identified archaeological feature and/or site is considered to be potentially significant (per NRHP Criteria for Evaluation), additional fieldwork (may be warranted. Additional fieldwork will be in the form of Phase II investigations for the purposes of gathering sufficient data to assess NRHP eligibility and, potentially, Phase III investigations to mitigate adverse effects on sites determined to meet the NRHP criteria for eligibility (based on the results of Phase II investigations). The need for additional phases of fieldwork will be determined through consultation with NYSDOT, the FHWA, SHPO, and the Onondaga Nation.

As described previously, if potential human remains and/or funerary objects associated with human remains are identified during machine-aided archaeological testing, all work in the immediate vicinity will stop and the NYSDOT cultural resources lead for the Project will be contacted. All applicable procedures outlined in the SHPO Human Remains Discovery Protocol (NYSOPRHP, 2015) (Appendix A), the Haudenosaunee Human Remains Protocol (Grand Council of the Haudenosaunee, 2002) (Appendix B), and the NYSDOT *Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction* (Appendix C) will be followed.

Because of the logistical constraints presented by urban archaeological testing (i.e., mobilization of mechanical equipment and operators, disruption of existing use of properties, pavement removal, the potential removal of large quantities of fill), it is anticipated that any Phase II/III archaeological work that is required will be conducted immediately following the determination that identified archaeological features warrant further investigation for the purpose of an eligibility determination or data recovery.

At each location selected for archaeological testing, at least one backhoe trench will be excavated under the supervision of a professional archaeologist following the methodology proposed above. Based on the methods employed during previously conducted Phase I machine-aided archaeological testing within the City of Syracuse (e.g., Panamerican Consultants, Inc., 2000; HAA, 2001a; HAA, 2001b; HAA 2001c; HAA, 2003a; HAA, 2003b), and the scope of the current Project, it is anticipated that backhoe trenches will likely range in size from approximately 6 feet (1.2 meters) wide by approximately 9 feet (1.8 meters) long to approximately 10 feet (3.1 meters) wide by up to 50 feet (15 meters) long; however, they may be larger or smaller as conditions dictate. Machine-aided Phase IB archaeological testing is recommended at the following locations (same for both alternatives) (see Figure 5):

- Between 5 and 7 former residential/commercial lots along Almond Street, in areas currently characterized by open lots and/or parking lots (see Figure 5). Testing locations will prioritize the areas near former rear lot lines to determine if shaft features or other potentially significant archaeological features are present.
- Between 3 and 5 former residential/commercial lots on the north side of Erie Boulevard between Townsend Street and Oswego Boulevard, in areas currently characterized by open lots and/or parking lots – historically, these lots were the locations of commercial facilities located along the Erie and/or Oswego Canals (see Figure 5). Testing locations will prioritize the areas near former rear lot lines to determine if shaft features or other potentially significant archaeological features are present.
- Up to 3 locations along the historic alignment of Onondaga Creek, in areas currently characterized by open lots and/or parking lots. The purpose of this testing is to determine if potential Native American human remains (see Section 2.4 and Figure 4 of this work plan), as well as any archaeological resources, are present in this area.

The schedule and timing of the Phase IB archaeological field investigations, particularly in areas where the removal of pavement and other machine-aided testing will be necessary, will be coordinated to minimize multiple episodes of soil disturbance and disruption of existing land uses. Maximum efficiency will be achieved if machine-aided testing is undertaken immediately prior to the initiation of project construction. This way, areas disturbed by machine-aided testing will not need to be restored to their prior state because they will be immediately thereafter impacted by project construction.

3.1.3 Archaeological Monitoring during Construction

Archaeological monitoring during construction will be restricted to those areas where removal of pavement in advance of construction is not feasible (such as within active roadways). Archaeological monitoring will be conducted by qualified professional archaeologists who will observe all potential earth-disturbing construction activities associated within the areas recommended for monitoring (see Figure 5), which include:

- Viaduct Alternative (see Figure 5, Sheet 1)
  - Locations within the Viaduct Priority Area where soil disturbance greater than approximately 2 feet (61 cm) below the modern ground surface is proposed along streets overlapping with mapped alignments of the Enlarged Erie or Oswego Canals (see Figure 3, Sheet 2; and Figure 5, Sheet 2).
  - Locations within the Viaduct Priority Area where disturbance greater than approximately 2 feet (61 cm) below the current ground surface is proposed within existing roadways in areas adjacent to the former locations of waterbodies (and therefore sensitive for Native American human remains and other Pre-Contact resources; see Figure 4, Sheet 1; and Figure 5, Sheet 1).

- Community Grid Alternative (see Figure 5, Sheet 2)
    - Locations within the Viaduct Priority Area where soil disturbance greater than approximately 2 feet (61 cm) below the modern ground surface is proposed along streets overlapping with mapped alignments of the Enlarged Erie or Oswego Canals (see Figure 3, Sheet 2 and Figure 5, Sheet 2).
    - Locations within the Viaduct Priority Area where disturbance greater than approximately 2 feet (61 cm) below the current ground surface is proposed within existing roadways in areas adjacent to the former locations of waterbodies (and therefore sensitive for human remains; see Figure 4, Sheet 2 and Figure 5, Sheet 2).
    - Locations within the I-81/I-481 Southern Interchange where disturbance greater than approximately 2 feet (61 cm) below the current ground surface is proposed within existing roadways in areas adjacent to the former locations of waterbodies (and therefore sensitive for human remains; see Figure 4, Sheet 2 and Figure 5, Sheet 2).
    - Locations within the I-481 Eastern Improvements area that are adjacent to the former locations of waterbodies (and therefore sensitive for human remains). Proposed construction in these areas will be limited to installing footers for piers for an elevated highway in areas currently characterized by wetlands. Because of the wetland character of these areas, the potential for human remains is considered highly unlikely and archaeological testing in advance of construction is not considered feasible.

During construction monitoring, on-site archaeologists will have full access to the construction site and full Stop Work Authority. Archaeologists will inspect exposed soils throughout the course of excavation/construction and may temporarily stop work at times to further investigate exposed artifacts, foundations, soil stains, or other indications of potentially significant cultural resources. Investigation may consist of: visual inspection of exposed materials and/or trench walls, photography, hand excavation with a shovel and/or trowel, collection of artifacts and/or soil samples, and screening of excavated back dirt. It is assumed that the construction contractor will assist the archaeological consultant in maintaining safety standards (as necessary) during inspection (e.g., shoring up or grading trench walls to meet Occupational Health and Safety Administration standards). The presence of clearly modern materials, such as plastic fragments, modern bottle glass fragments, or twentieth-century architectural materials, in trench profiles or fill deposits will be noted but these materials will not be collected for subsequent analysis.

NYSDOT will coordinate with the Onondaga Nation and provide opportunities for a Nation representative to be present during archaeological monitoring during construction of the proposed Project.

A complete Archaeological Monitoring Protocol, including specific time frames allowable for trench/excavation inspection and investigation of potentially NRHP-eligible archaeological finds, as well as an explanation of the specific activities to be conducted by the archaeologist within the trench, and specific assistance required of construction personnel, is provided in Sections 4.1 and 4.2 of this report.

3.2 Laboratory Methods

Following completion of the archaeological fieldwork, materials recovered will be washed (when appropriate), identified, inventoried and re-bagged in labeled clean 4-mil archival quality plastic bags. Recovered artifacts will then be identified and described based on material type and standard descriptive characteristics in accordance with standard archaeological practice. A complete inventory of collected artifacts will be included as an appendix to the Phase IB report(s).

Depending on whether potentially significant archaeological features or deposits are identified, specialized laboratory analyses for specific materials may be necessary. These may include lithic (stone tool) analysis, vessel reconstruction and/or minimum vessel analyses, faunal (i.e., animal bone) analysis, paleo-botanical (i.e., plant remains) analysis, or other specialized soil/sediment analyses. The need for and appropriate application of specialized archaeological analyses will be determined in consultation with the NYSDOT, SHPO, FHWA, and the Onondaga Nation (for Pre-Contact Native American sites)

All materials will be processed and stored in accordance with the New York State Museum's (NYSM's) Accession Policy and Accession Standards, as articulated in the "Archaeological Curation Guidelines" (http://www.nysm.nysed.gov/services/233/curation.html) and the NYAC Standards (NYAC, 1994). All materials collected from state lands will be treated in accordance with the New York State Education Department Law §233.

3.3 Phase IB Archaeological Survey Report

Within two weeks of the completion of shovel testing, the archaeologist will provide an EOF letter to the NYSDOT summarizing the preliminary results of shovel testing. Additionally, within two weeks of the completion of machine-aided excavation, the archaeologist will provide an EOF letter to the NYSDOT, summarizing the preliminary results of machine-aided testing. The EOF letters will identify potentially eligible archaeological resources, and provide recommendations for additional investigations (i.e., Phase II), if needed, to evaluate the NRHP eligibility of specific archaeological sites. The EOF letters will also identify and map areas where shovel testing or machine-aided testing revealed no archaeological resources.

The results of the Phase I survey will be presented in a formal illustrated report prepared in accordance with the NYSED *Cultural Resources Survey Program Work Scope Specifications for Cultural Resources Investigations for New York State Department of Transportation Projects* (NYSED, 2004), and SHPO's *Phase I Archaeological Report Format Requirements* (NYSOPRHP, 2005). The report will include a narrative summary of the methods and results of the archaeological survey, recommendations regarding S/NRHP eligibility and/or recommendations for additional (i.e., Phase II) investigations to evaluate eligibility for each identified resource, documentation of soils and/or archaeological contexts encountered during the survey, a complete artifact inventory, and will include illustrations, photographs, and maps, as appropriate.

4.0 PLAN FOR ARCHAEOLOGICAL MONITORING DURING CONSTRUCTION

4.1 Plan for Archaeological Monitoring During Construction

Archaeological monitoring will be undertaken by specialists trained in archaeological fieldwork and monitoring and under the supervision of an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards (36 CFR, Appendix A to Part 61). A representative from the Onondaga Nation will be provided opportunities to observe archaeological monitoring during construction.

All archaeological monitoring during construction will be conducted in accordance with existing on-site safety protocols as well as federal labor standards (OSHA 29 CFR 1926 Subpart P). OSHA 29 CFR 1926, Subpart P specifies appropriate protection measures to be used for employees working in open excavations. These include sloping and/or shoring excavation walls to prevent collapse. If the archaeologist needs to enter the open excavation to inspect exposed cultural material, construction personnel will install shoring/support in the open excavation, if this required by OSHA 29 CFR 1926 (Subpart P), given the dimensions of the excavation.

If the archaeological consultant encounters human remains (or potential human remains) during the archaeological monitoring, the *NYSDOT Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction,* the SHPO Human Remains Discovery Protocol, and the Haudenosaunee Protocol on Human Remains, will be followed. Immediately upon notification of the discovery, the NYSDOT will contact the SHPO, FHWA, Tony Gonyea of the Onondaga Nation, and Joseph Heath, General Counsel to the Onondaga Nation. The SHPO Human Remains Discovery Protocol (NYSOPRHP, 2015), the Haudenosaunee Protocol on Human Remains (Haudenosaunee Confederacy, 2002), and the *NYSDOT Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction* are attached to this document as Appendices A, B, and C, respectively and the Human Remains and Funerary Objects Protocol for the current project is discussed further in Section 5.0 of this work plan.

4.1.1 Initial Inspection and Investigation of Potential Cultural Material

If the archaeologist identifies potential cultural material during construction, he/she will request a temporary work stoppage to inspect the location of the exposed cultural material. This temporary work stoppage will be limited to one hour for each area within an approximately 20-foot (6.1-meter) radius. Following the confirmation of the work stoppage, the archaeologist will enter the open excavation, once the necessary shoring, if required, has been installed, and inspect the exposed cultural material. During this initial inspection, the archaeologist may photograph the exposed cultural material, collect the cultural material (or a sample thereof), draw a sketch map of the exposed stratigraphy, take additional notes, remove soil samples, and conduct additional hand excavation with a shovel or a trowel.

Following the initial inspection of identified cultural material, if the archaeologist identifies the materials as obviously, modern, or historic but with no chance of meeting the NRHP Criteria for Evaluation, he or she will notify construction personnel that they can continue work. If, however, following the initial inspection, the archaeologist determines the cultural material to be potentially significant (i.e., meet the NRHP Criteria for Evaluation), he or she will request an extension of the temporary work stoppage in order to further evaluate the exposed cultural material. The extended work stoppage may last up to but no longer than four hours, not including one hour for the initial inspection of exposed cultural material, as described above. Taking into consideration input from the Onondaga Nation representative on-site, the archaeologist will make a preliminary assessment of potential eligibility and coordinate with NYSDOT to determine the need for additional archaeological investigations and documentation. As described in the next section, NYSDOT will consult with the SHPO, FHWA, and the Onondaga Nation. If no additional investigation or documentation is needed, construction activities will resume. Activities undertaken by the archaeologist during the preliminary evaluation of potentially NRHP-eligible (i.e., significant) cultural materials will be similar to those undertaken for initial inspection of cultural materials (discussed above), but may also include screening of excavation back dirt or soil removed via hand excavation through ¼-inch hardware cloth and collection of any artifacts recovered through screening. All evaluative testing activities would be restricted to the APE for Direct Effects for the Project.

The timeframe outlined above would not apply in the case of a human remains discovery. If potential human remains and/or funerary objects associated with human remains are identified during machine-aided archaeological testing, all work in the immediate vicinity will stop the NYSDOT cultural resources lead for the Project will be contacted. All applicable procedures outlined in the NYSDOT *Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction* (Appendix C), SHPO Human Remains Discovery Protocol (NYSOPRHP, 2015) (Appendix A), and the Haudenosaunee Human Remains Protocol (Grand Council of the Haudenosaunee, 2002) (Appendix B) will be followed. In this instance, the temporary work stoppage could last significantly longer than the times listed above. It is important to note that in the case of identified human remains, no additional evaluative testing or data recovery activities will occur.

Given the urban nature of the APE for Direct Effects, it is anticipated that historic and/or modern artifacts may be encountered in secondary fill contexts (i.e., neighborhood trash and coal ash dumps). For archaeological materials clearly located within secondary fill contexts, the archaeological consultant will describe and photograph a representative sample of the materials but will not collect them. Archaeological materials identified in secondary fill contexts will be described in an archaeological monitoring report to be submitted to NYSDOT and FHWA following the conclusion of fieldwork. It should be noted; however, that in addition to formal and informal refuse dumps, the Erie and Oswego Canals within the City of Syracuse were often filled with coal ash and other refuse following their closure in the early twentieth century. Therefore, although individual artifacts encountered within secondary refuse deposits will

not be collected for further analysis, the stratigraphy of these deposits will be carefully documented and, if possible, a determination will be made if they represent canal fill.

The Phase IA Archaeological Sensitivity Assessment (EDR, 2016:158-229) describes in detail the various types of potential archaeological sites that could occur within the APE for Direct Effects, as well as how the significance of each type of archaeological site would be assessed under the NRHP Criteria for Evaluation. For historic archaeological materials, the proposed archaeological monitoring during construction applies primarily to areas with potential to contain Erie or Oswego Canal-related features, but there is the potential for other historic or pre-contact cultural resources to be present in the monitored areas. Potentially significant archaeological resources which may be encountered include:

- Historic cultural resources:
    - Intact portions of the Erie or Oswego Canal prisms, other canal-related features.
    - Intact archaeological features in undisturbed soil contexts such as occupied surfaces, foundations, and shaft features including wells, cisterns, and privies.
    - Diagnostic historic artifacts such as household and/or industrial materials located in undisturbed primary contexts.
    - Any indications of human burials or funerary objects.

- Pre-Contact Native American cultural resources:
    - Intact archaeological features including hearths, storage pits, middens, palisade remnants, and structural remnants.
    - Diagnostic artifacts such as projectile points, ceramics, and other stone and bone tools located in undisturbed primary contexts.
    - Any indications of human burials or funerary objects.

In the cases of the above types of cultural resources, significance would be assessed in the field by the monitoring archaeologist, following the methods discussed above, who will provide preliminary recommendations to NYSDOT. NYSDOT, in turn, will consult with FHWA, SHPO, and the Onondaga Nation. A *Project Contacts Table* is included as Appendix D of this work plan. The Phase IA Archaeological Sensitivity Assessment for the I-81 Viaduct Project (EDR, 2016) discusses the specific considerations which will be brought to bear in assessing significance for different types of cultural resources. However, as a rule, cultural resources will be considered potentially significant if they contain cultural material within intact stratified deposits that maintain a high degree of physical integrity. Cultural materials

indicative of a potentially significant site could include a density and diversity of artifacts, including temporally or culturally diagnostic artifacts, intact features, and artifacts indicative of a specific activity or activities.

If the archaeological consultant determines the discovery to be a potentially significant archaeological resource (i.e., potentially NRHP-eligible), he/she will immediately notify the NYSDOT Project Manager (or identified Point of Contact) and/or onsite construction manager and request a temporary suspension of work in the location, consistent with the time frames discussed above in this Section. Preliminary determination of NRHP-eligibility will be based on the identification of potentially significant cultural resources as described above.

4.1.2 Additional Archaeological Investigations to Determine NR Eligibility

In some cases, additional archaeological testing/documentation of significant or potentially significant cultural resources, beyond the initial inspection and preliminary assessment of significance discussed above, may be required. The need for additional archaeological testing/documentation of potentially significant archaeological resources will be assessed based on consultation between the on-site archaeological monitor and NYSDOT, who will in turn consult with FHWA, SHPO, and the Onondaga Nation. Additional archaeological testing/documentation is anticipated to be necessary in cases where large intact portions of significant cultural resources occur within the APE for Direct Effects. These cultural resources would need to be recovered or sampled prior to the continuation of construction in the area. Additional archaeological testing/documentation may also be necessary in cases where the full extent/nature of the cultural resource identified within the APE for Direct Effects is unclear or impossible to establish based on the amount exposed by construction activities. In these cases, construction activities in the immediate vicinity of the cultural resources would cease and the archaeologist would proceed to test, record, and/or recover the cultural materials to an extent agreed upon by NYSDOT as sufficient. Additional testing/documentation in these cases would be limited to eight hours for each individually identified resource in the case of non-canal resources, or eight hours per 50 linear feet (15 meters) of exposed canal or canal-related features.

When potentially significant cultural resources are identified, the archaeological monitor will consult with Project personnel to determine the best course of action moving forward. It likely will be appropriate to initiate archaeological sampling immediately to further evaluate the integrity and potential significance of any identified archaeological remains. Unless otherwise directed by NYSDOT based on consultation with the SHPO, FHWA and Onondaga Nation, all work to evaluate the discovered archaeological resources will be restricted to the proposed area of potential earth disturbance associated with the Project (i.e., the APE for Direct Effects).

4.1.3 Implementation of Data Recovery Procedures

In an instance where exposed cultural material is determined to meet the NRHP Criteria for Evaluation, the archaeologist will immediately contact NYSDOT, as discussed above. All construction work in the immediate vicinity of the discovery will cease and data recovery procedures will be implemented. Data recovery procedures will be implemented to minimize the interruption of construction. Therefore, construction activities will only be stopped in the immediate vicinity of the data recovery, and only to the extent to ensure the safety of the on-site archaeologists and to ensure the protection of the exposed cultural material until data recovery is complete. Once initiated, it is anticipated that data recovery activities at any given location will be completed within no more than 15 days of the initiation of data recovery fieldwork.

Data recovery activities may include the documentation, photography, measurement, and collection of historic period or pre-contact Native American archaeological materials exposed within construction excavations. Data recovery may also involve additional investigation of such resources by hand excavation. As noted above, data recovery would occur when cultural material that meets the NRHP Criteria for Evaluation has been exposed by construction activities. This could include, but is not limited to, intact portions of the Erie or Oswego Canal prisms, or other intact canal-related features, historic structural foundations or shaft features, or significant concentrations or deposits of diagnostic historic artifacts. It could also include intact pre-contact Native American archaeological features including hearths, storage pits, middens, palisade remnants, or structure remains, or significant concentrations of diagnostic pre-contact artifacts such as projectile points, ceramics, and other stone and bones tools located in an undisturbed primary context.

In the case of historic features and artifacts encountered during construction monitoring, data recovery activities will consist of documentation of exposed features and soil stratigraphy and the collection of exposed artifacts (or a sample thereof). In the case of pre-contact Native American features and artifacts encountered during construction monitoring, data recovery activities could consist of documentation of exposed features and soil stratigraphy and the collection of feature fill and/or exposed artifacts (or a sample thereof). Typically, data recovery activities will be restricted to open excavations; however, in some limited cases it may be necessary to expose additional areas as part of data recovery. This will be accomplished via hand excavation wherever possible, but may also require mechanical excavation. In these instances, it is anticipated that data recovery activities could last for up to 10 hours for each individually identified resource in the case of non-canal (historic or pre-contact) resources, or 10 hours per 50 linear feet (15 meters) of exposed canal prism or canal-related features.

As discussed above for artifacts recovered during Phase IB survey, all artifacts recovered during data recovery investigations will be processed and stored in accordance with the New York State Museum's (NYSM's) Accession Policy and Accession Standards, as articulated in the "Archaeological Curation Guidelines"

(http://www.nysm.nysed.gov/services/233/curation.html) and the NYAC Standards (NYAC, 1994). All materials collected from state lands will be treated in accordance with the New York State Education Department Law §233.

Additionally, as discussed above for data recovery occurring as a result of Phase IB survey an EOF letter will be prepared and submitted to NYSDOT within five days of the conclusion of data recovery fieldwork. The EOF will summarize the preliminary results of the investigations, make recommendations for further work (or lack thereof), and present a time frame for the completion of a full Phase III report.

4.2 Contractor Assistance and Consideration

The following is a summary of expectations and considerations pertaining to the construction contractor's role in archaeological monitoring and/or data recovery investigations for the Project.

Archaeological Monitoring and Contractor General Considerations:

- The construction contractor should expect delays due to the identification of cultural materials during excavation.
- All archaeological monitoring during construction will be conducted in accordance with existing on-site safety protocols as well as federal labor standards (OSHA 29 CFR 1926 Subpart P).
- Temporary work stoppages for the preliminary investigation of exposed cultural materials will be limited to one hour for each approximately 20-foot (6.1-meter) radius area.
- Extended temporary work stoppages to further evaluate potentially NRHP-eligible cultural materials may last for up to four hours, not including the initial temporary stoppage discussed above.
- In some cases, additional archaeological testing/documentation of significant or potentially significant cultural resources, beyond the initial inspection and preliminary assessment of significance discussed above, may be required. Additional testing/documentation in these cases would be limited to eight hours for each individually identified resource in the case of non-canal resources, or eight hours per 50 linear feet (15 meters) of exposed canal or canal-related features.
- In certain cases, when exposed cultural material has been determined to be eligible or potentially eligible for listing on the NRHP, data recovery investigations will be implemented during which construction in this location will be suspended for up to 15 days. For historic-period archaeological resources, it is anticipated that data recovery investigations will require no more than 10 hours per individual non-canal related resource and 10 hours for every 50 linear feet of exposed canal prism or canal-related resource.
- If human remains are identified, all construction in the vicinity of the discovery will cease pending consultation, as discussed in Section 5.0 of this document. As described above, the time restrictions for temporary work stoppages do not apply to the discovery of human remains. In each case, the duration of the work stoppage

will be determined by the time needed to carry out actions for avoidance or an appropriate treatment as determined through consultation. Within 24-72 hours of the discovery, NYSDOT will notify the construction contractor of the expected duration for the suspension of the construction activities in the area of the discovery.

Construction Contractor Responsibilities:

- The contractor will stop or slow work as directed by the archaeologist.
- If human remains are identified, all construction in the vicinity of the discovery will cease pending consultation among the SHPO, FHWA, the Onondaga Nation, and NYSDOT, as discussed in Section 5.0 of this document. Communication and coordination among the consulting parties will be done by NYSDOT and is not the obligation of the construction contractor.
- The contractor will assist the archaeologist in complying with all work place safety measures, including shoring trenches deeper than 4 feet (1.2 meters) for the archaeologist to enter.
- If data recovery investigation is required at specific locations, it may be necessary to leave excavations open overnight. It will be the construction contractor's responsibility to secure the open excavation in these cases.
- The construction contractor will provide heavy equipment and an operator to aid the archaeologist in tasks such as the removal of overburden during archaeological monitoring and data recovery.
- The construction contractor and/or NYSDOT will provide the archaeologist with at least one week's notice prior to initiating construction/excavation in areas subject to archaeological monitoring, for logistical reasons.

Archaeologist Responsibilities:

- The archaeologist will comply with all on site safety rules and regulations.
- The archaeologist will communicate the need for and anticipated duration of any temporary work stoppages clearly and effectively to the construction contractor if cultural materials are exposed.
- The archaeologist will also clearly communicate to the construction contractor if and when work may resume in a given area.
- If the archaeological consultant determines the discovery to be a potentially significant archaeological resource (i.e., potentially NRHP-eligible), he/she will immediately notify the NYSDOT Project Manager (or identified Point of Contact)

5.0 HUMAN REMAINS AND FUNERARY OBJECTS PROTOCOL

In the event of an unanticipated discovery of potential human remains and/or funerary objects, all work in the immediate vicinity will stop until further notice and the NYSDOT cultural resources lead for the Project will be contacted. The potential remains/funerary objects will be treated with respect, left *in situ* by all on site personnel, and protected from further disturbance. All fieldwork will be conducted in accordance with SHPO's Human Remains Discovery Protocol (NYSOPRHP, 2015) (Appendix A), and the Haudenosaunee Human Remains Protocol (Grand Council of the Haudenosaunee, 2002) (Appendix B). If the discovery occurs during the Project's construction, the *NYSDOT Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction* will be implemented (Appendix C). If human remains or funerary objects are Native American, a treatment plan will be developed in consultation with the SHPO and the Onondaga Nation, consistent with the established protocols and guidance. It is worth noting that the SHPO, Haudenosaunee, and NYDSOT human remains protocols all require temporary suspension of activity in the vicinity of the discovery, protection of discovered remains, notification of SHPO and Native American representatives, and consultation regarding treatment of remains.

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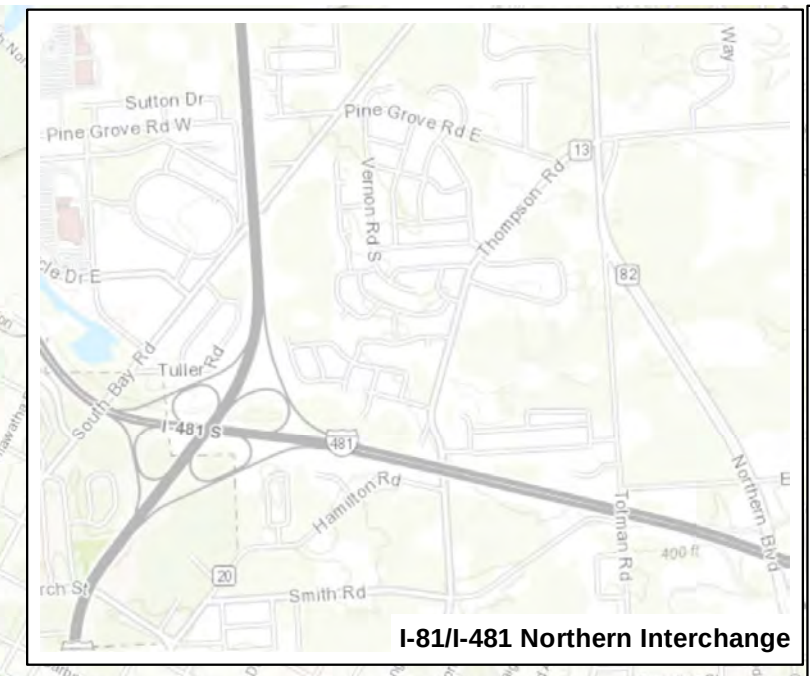
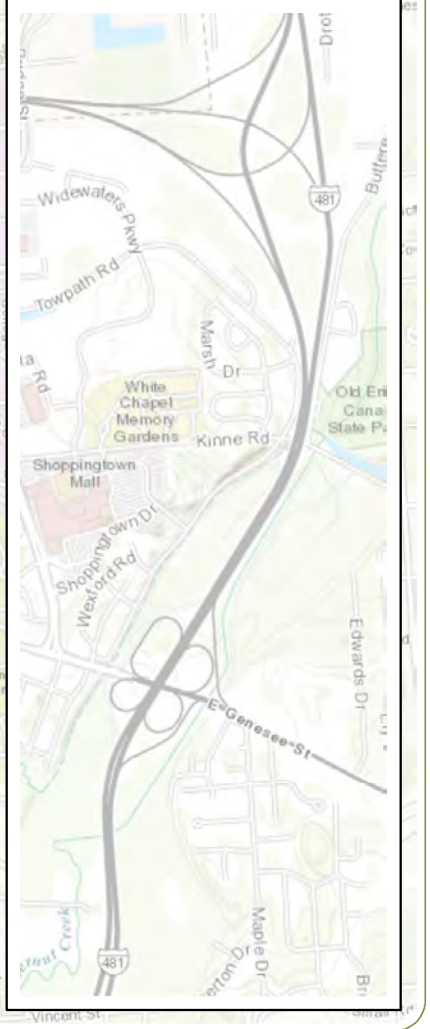
Figures



Central Study Area



I-81 Viaduct Project

Onondaga County, New York

Figure 1: Area of Potential Effect for Direct Effects
Sheet 1: Viaduct Alternative

September 2017

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

APE for Direct Effects

Legend

0 500 1,000 2,000 Feet

N W E S

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U.S.Department of Transportation
Federal Highway Administration

I-81/I-481 Northern Interchange

I-481 Eastern Improvements - North

Central Study Area

I-481 Eastern Improvements - South

I-81/I-481 Southern Interchange

I-81 Viaduct Project

Onondaga County, New York

Figure 1: Area of Potential Effect for Direct Effects
Sheet 2: Community Grid Alternative

September 2017

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Legend

APE for Direct Effects

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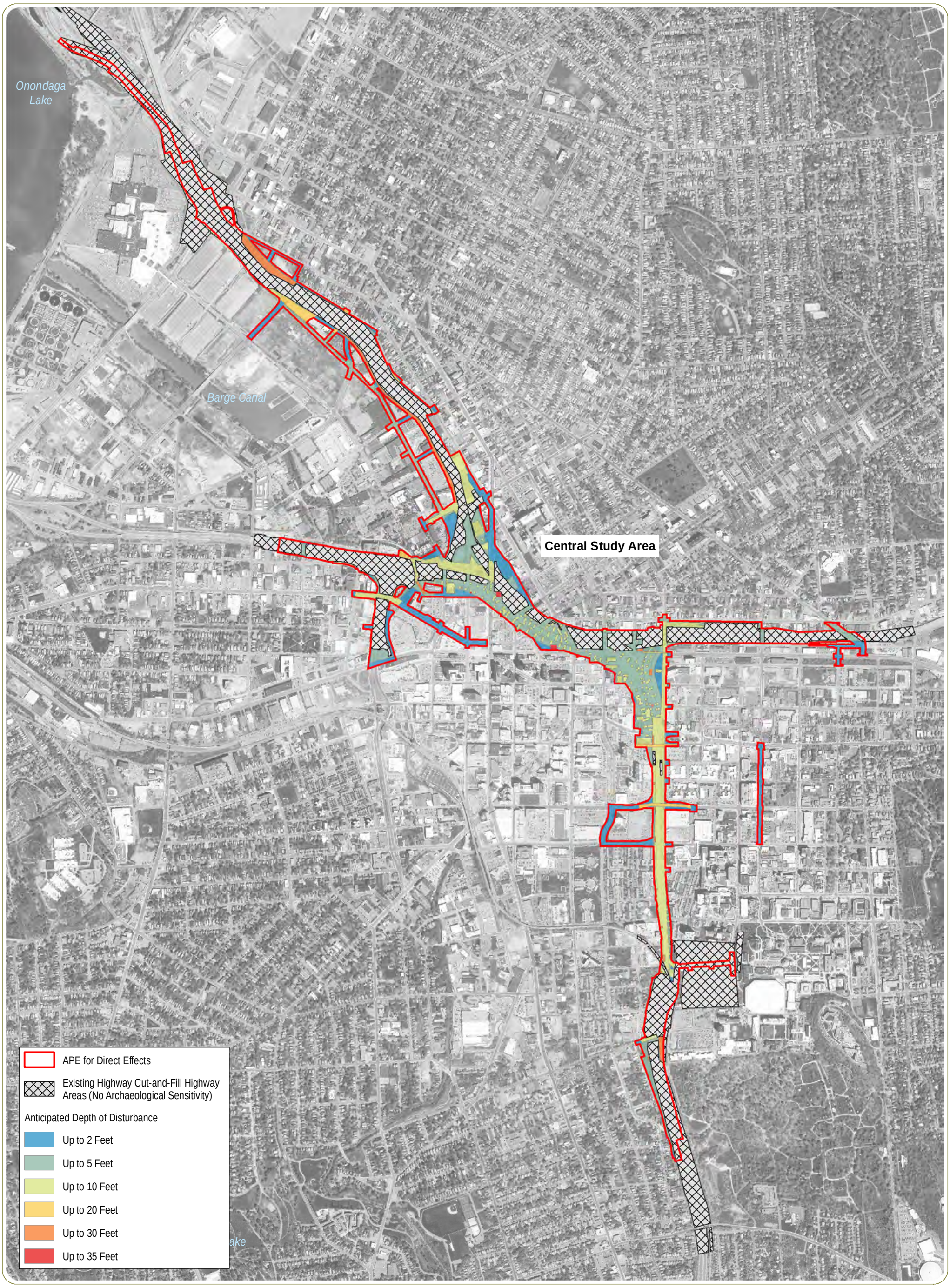
Federal Highway Administration



I-81 Viaduct Project

Onondaga County, New York

Figure 2: Anticipated Depth of Soil Disturbance (Estimated)
Sheet 1: Viaduct Alternative

September 2017

Notes:
1. Basemap: NYS Digital Orthoimagery Program 1-foot resolution orthoimagery, 2015.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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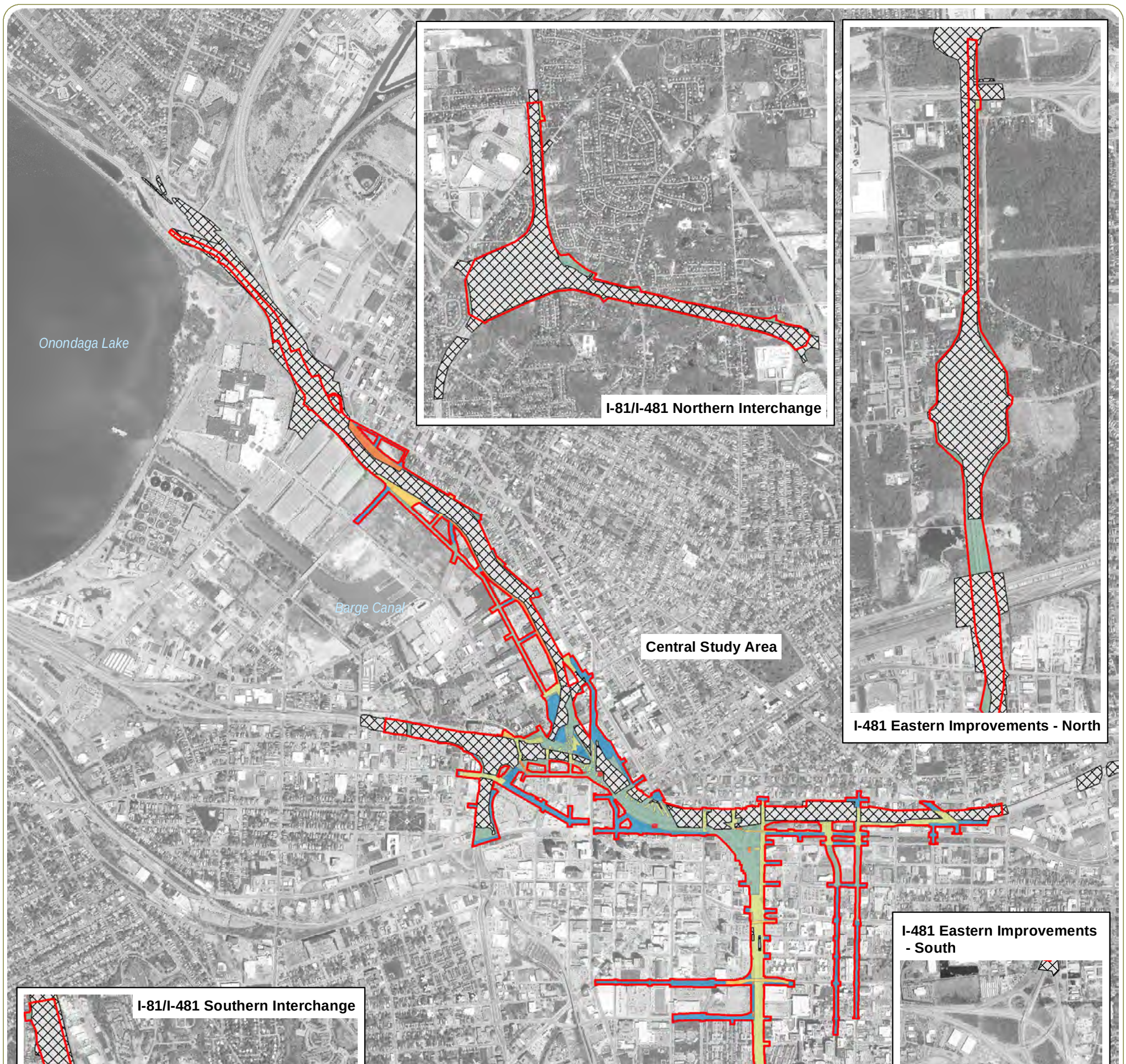
U.S. Department of Transportation
Federal Highway Administration



I-81 Viaduct Project

Onondaga County, New York

Figure 2: Anticipated Depth of Soil Disturbance (Estimated)
Sheet 2: Community Grid Alternative

September 2017

Notes:
1. Basemap: NYS Digital Orthoimagery Program 1-foot resolution orthoimagery, 2015.
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I-81 Viaduct Project

Onondaga County, New York

Figure 3: Archaeological Sensitivity

Sheet 1: Viaduct Alternative

September 2017

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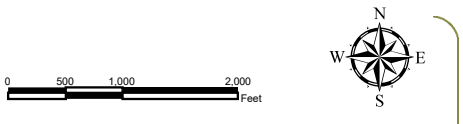
I-81 Viaduct Project

Onondaga County, New York

Figure 3: Archaeological Sensitivity

Sheet 2: Viaduct Alternative

September 2017



1. Per consultation with the Onondaga Nation, all areas along the historic alignment of Onondaga Creek and any additional areas near the natural/original course of waterbodies within the APE should be considered sensitive for the potential to contain human burials. To address these concerns, the mapped extent and path of watercourses within the APE for Direct Effects were digitized and included in GIS mapping for the project. Historic maps from 1827, 1834, 1852, 1859, 1874, and 1938-1943 were digitally georeferenced using GIS software. All watercourses depicted on those maps within or immediately adjacent to the APE were traced, and buffered by 50 feet (15 meters) to account for uncertainty in the original cartographic depiction of watercourses and/or potential geo-referencing errors. Areas adjacent to the mapped former locations of these waterbodies represent areas that are considered archaeologically sensitive due to potential for buried human remains.
2. Only those cemeteries and areas where historical records indicate the potential for human burials located within or adjacent to the APE for Direct Effects of the Viaduct Alternative are depicted on this map.

Central Study Area

I-481 Eastern Improvements - North

I-81/I-481 Northern Interchange

I-81/I-481 Southern Interchange

I-481 Eastern Improvements - South

Old St. Mary's Cemetery

Oakwood Cemetery

I-81 Viaduct Project

Onondaga County, New York

Figure 4: Areas of Potential Sensitivity for Human Remains
Sheet 1: Viaduct Alternative

September 2017

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Legend

- Areas Adjacent to Streams Depicted on Historic Maps
- Cemeteries
- APE for Direct Effects

Map Documented Watercourses

- 1827
- 1834
- 1852
- 1859
- 1874
- 1938-1943

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1. Per consultation with the Onondaga Nation, all areas along the historic alignment of Onondaga Creek and any additional areas near the natural/original course of waterbodies within the APE should be considered sensitive for the potential to contain human burials. To address these concerns, the mapped extent and path of watercourses within the APE for Direct Effects were digitized and included in GIS mapping for the project. Historic maps from 1827, 1834, 1852, 1859, 1874, and 1938-1943 were digitally georeferenced using GIS software. All watercourses depicted on those maps within or immediately adjacent to the APE were traced, and buffered by 50 feet (15 meters) to account for uncertainty in the original cartographic depiction of watercourses and/or potential geo-referencing errors. Areas adjacent to the mapped former locations of these waterbodies represent areas that are considered archaeologically sensitive due to potential for buried human remains.
2. Only those cemeteries and areas where historical records indicate the potential for human burials located within or adjacent to the APE for Direct Effects of the Community Grid Alternative are depicted on this map.

Central Study Area

I-481 Eastern Improvements - North

I-81/I-481 Northern Interchange

I-81/I-481 Southern Interchange

I-481 Eastern Improvements - South

Old St. Mary's Cemetery

Oakwood Cemetery

I-81 Viaduct Project

Onondaga County, New York

Figure 4: Areas of Potential Sensitivity for Human Remains
Sheet 2: Community Grid Alternative
September 2017

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Legend

- Areas Adjacent to Streams Depicted on Historic Maps
- Cemeteries
- APE for Direct Effects

Map Documented Watercourses

- 1827
- 1834
- 1852
- 1859
- 1874
- 1938-1943

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Phase 1B Archaeological Testing Recommendations:
1. Shovel tests will be excavated in unpaved areas and/or areas where significant fill deposits are not documented or anticipated.
2. Mechanized excavation/machine-aided archaeological testing will be employed in a representative sample of paved and/or previously disturbed areas where the proposed depth of construction activities is anticipated to be significant (i.e., greater than 2 feet below existing grade, or otherwise involve large amounts of ground disturbance). To determine whether potentially significant archaeological deposits or features are present in previously disturbed areas within the APE, machine-aided archaeological testing will be conducted at selected locations to provide a representative sample of potential archaeological resources. The schedule and timing of the Phase 1B archaeological field investigations, particularly in areas where the removal of pavement and other machine-aided testing will be necessary, will be coordinated to minimize multiple episodes of soil disturbance and disruption of existing land uses.
3. Archaeological construction monitoring will be employed in existing public roadways where the proposed depth of construction activities is anticipated to be significant (i.e., greater than 2 feet below existing grade or otherwise involve large amounts of ground disturbance) and where there is a potential for significant archaeological resources to be located (i.e., Erie and Oswego-Canal related resources).

Onondaga Lake

Barge Canal

Machine-aided archaeological testing will be conducted at up to 3 locations along the historic alignment of Onondaga Creek, in areas currently characterized by open lots and/or parking lots. The purpose of this testing is to determine if potential Native American human remains (see Section 2.4 and Figure 4 of this work plan), as well as any archaeological resources, are present in this area.

Central Study Area

Machine-aided archaeological testing will be conducted at between 3 and 5 former residential/commercial lots on the north side of Erie Boulevard between Townsend Street and Oswego Boulevard, in areas currently characterized by open lots and/or parking lots – historically, these lots were the locations of commercial facilities located along the Erie and/or Oswego Canals (see Figure 5). Testing locations will prioritize the areas near former rear lot lines to determine if shaft features or other potentially significant archaeological features are present.

Machine-aided archaeological testing will be conducted at between 5 and 7 former residential/commercial lots along Almond Street, in areas currently characterized by open lots and/or parking lots. Testing locations will prioritize the areas near former rear lot lines to determine if shaft features or other potentially significant archaeological features are present.

Phase 1B Archaeological Methodology
- No Archaeological Testing Necessary
- Shovel Testing
- Machine-Aided Testing
- Monitoring

I-81 Viaduct Project

Onondaga County, New York

Figure 5: Recommended Phase 1B Archaeological Methods
Sheet 1: Viaduct Alternative

September 2017

Notes:
1. Basemap: NYS Digital Orthoimagery Program 1-foot resolution orthoimagery, 2015.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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Phase 1B Archaeological Testing Recommendations:
1. Shovel tests will be excavated in unpaved areas and/or areas where significant fill deposits are not documented or anticipated.
2. Mechanized excavation/machine-aided archaeological testing will be employed in a representative sample of paved and/or previously disturbed areas where the proposed depth of construction activities is anticipated to be significant (i.e., greater than 2 feet below existing grade, or otherwise involve large amounts of ground disturbance). To determine whether potentially significant archaeological deposits or features are present in previously disturbed areas within the APE, machine-aided archaeological testing will be conducted at selected locations to provide a representative sample of potential archaeological resources. The schedule and timing of the Phase 1B archaeological field investigations, particularly in areas where the removal of pavement and other machine-aided testing will be necessary, will be coordinated to minimize multiple episodes of soil disturbance and disruption of existing land uses.
3. Archaeological construction monitoring will be employed in existing public roadways where the proposed depth of construction activities is anticipated to be significant (i.e., greater than 2 feet below existing grade or otherwise involve large amounts of ground disturbance) and where there is a potential for significant archaeological resources to be located (i.e., Erie and Oswego-Canal related resources).

Onondaga Lake

Barge Canal

Machine-aided archaeological testing will be conducted at up to 3 locations along the historic alignment of Onondaga Creek, in areas currently characterized by open lots and/or parking lots. The purpose of this testing is to determine if potential Native American human remains (see Section 2.4 and Figure 4 of this work plan), as well as any archaeological resources, are present in this area.

Machine-aided archaeological testing will be conducted at between 3 and 5 former residential/commercial lots on the north side of Erie Boulevard between Townsend Street and Oswego Boulevard, in areas currently characterized by open lots and/or parking lots – historically, these lots were the locations of commercial facilities located along the Erie and/or Oswego Canals (see Figure 5). Testing locations will prioritize the areas near former rear lot lines to determine if shaft features or other potentially significant archaeological features are present.

I-481 Eastern Improvements - North

Central Study Area

I-81/I-481 Northern Interchange

I-81/I-481 Southern Interchange

I-481 Eastern Improvements - South

Machine-aided archaeological testing will be conducted at between 5 and 7 former residential/commercial lots along Almond Street, in areas currently characterized by open lots and/or parking lots. Testing locations will prioritize the areas near former rear lot lines to determine if shaft features or other potentially significant archaeological features are present.

Recommended Phase 1B Archaeological Testing Methodology

- No Archaeological Testing Necessary
- Shovel Testing
- Machine-Aided Testing
- Monitoring

I-81 Viaduct Project

Onondaga County, New York

Figure 5: Recommended Phase 1B Archaeological Methods
Sheet 2: Community Grid Alternative

September 2017

Notes:
1. Basemap: NYS Digital Orthoimagery Program 1-foot resolution orthoimagery, 2015.
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Appendix A:

New York State Office of Parks, Recreation and Historic Preservation Human Remains Discovery Protocol and Native American Graves Protection and Repatriation Act Guidance

State Historic Preservation Office/
New York State Office of Parks, Recreation and Historic Preservation
Human Remains Discovery Protocol
(June 2015)

In the event that human remains are encountered during construction or archaeological investigations, the New York State Historic Preservation Office (SHPO) recommends that the following protocol is implemented:

- Human remains must be treated with the utmost dignity and respect at all times. Should human remains or suspected human remains be encountered, work in the general area of the discovery will stop immediately and the location will be immediately secured and protected from damage and disturbance.

- Human remains or associated artifacts will be left in place and not disturbed. No skeletal remains or materials associated with the remains will be collected or removed until appropriate consultation has taken place and a plan of action has been developed.

- The SHPO, the appropriate Indian Nations, the involved state and federal agencies, the coroner, and local law enforcement will be notified immediately. Requirements of the corner and local law enforcement will be met. A qualified forensic anthropologist, bioarchaeologist or physical anthropologist will assess the remains *in situ* to help determine if the remains are Native American or non-Native American.

- If human remains are determined to be Native American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Please note that avoidance is the preferred choice of the SHPO and the Indian Nations. The involved agency will consult SHPO and appropriate Indian Nations to develop a plan of action that is consistent with the Native American Graves Protection and Repatriation Act (NAGPRA) guidance. Photographs of Native American human remains and associated funerary objects should not be taken without consulting with the involved Indian Nations.

- If human remains are determined to be non-Native American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Please note that avoidance is the preferred choice of the SHPO. Consultation with the SHPO and other appropriate parties will be required to determine a plan of action.

Appendix B:

Haudenosaunee Protocol for Handling Discovery of Human Remains

4.7 Protocol for Handling Discovery of Human Remains

	Known Burials	Unidentified Burials
When to contact?	**Intentional excavation** At the earliest time in decision-making process.	**Inadvertent Discovery** Upon discovery.
Which Nation to contact?	If find is within existing Nation boundary, contact that Nation's Cultural Resource representatives. If the find is within the traditional land use area (fifty mile radius from the current nation territory, contact the closest Nation's Cultural Resource Representative. If the find is within the aboriginal territory of each nation, as shown on the attached map, contact the Nation within that territory. For finds located within fifty miles on either side of the boundary lines shown on the map, contact the Cultural Resource Representatives of both Nations.	
Who to contact?	Haudenosaunee Cultural Resource Representatives HSCBRR	Haudenosaunee Cultural Resource Representatives HSCBRR
How to contact?	Contact list is provided.	
Information Required	Brief description of the find or potential find; site map and any information on the known cultural history of the area and summary of nearby archaeological findings.	
	Nation will send a representative to review the site.	Company must hire a Native American on-site observer.
Next steps	***Non-disturbance of burials is preferred.*** If after proper consultation, the remains must be removed, we prefer to have them reburied close to their original location as possible, provided the future sanctity of the grave can be assured. ***No remains should be removed without proper cultural protocols.*** If no safe local burial ground can be offered, the Haudenosaunee will reclaim the remains for reburial at an undisclosed location. The local government /state agency/developer must pay all of the costs for such reburial. All objects associated with the original burial must be reburied as well. All of the soil in the immediate area of the burial should also be placed in the new grave.	
Time Frame	30 to 45 days	As soon as possible

Appendix C:

NYSDOT Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction

NYSDOT Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction[1]

1. If a burial site, human remains, or bones thought to be human remains, are encountered during construction for a NYSDOT undertaking, the work will be stopped immediately and rescheduled to avoid disturbing the area. The remains will be left in place and protected from further damage.

2. In accordance with the current NYSDOT Standard Specifications, Section 107-01 D. *Archaeological Salvage*[2], the Engineer-in-Charge (EIC) will, through proper channels, notify appropriate Department personnel and other authorities. The EIC will report the discovery of human remains to the local police, and the county coroner having jurisdiction, or to the medical examiner, and will arrange immediate inspection of the site[3].

3. If the site is determined to be part of a criminal investigation, the police will notify the EIC when work in the area may resume.

4. If determined that the remains are not a police issue, the Regional Cultural Resources Coordinator (CRC) will notify the Federal Highway Administration (FHWA), the Office of Parks, Recreation and Historic Preservation/ State Historic Preservation Office (OPRHP/SHPO), appropriate Indian tribal contacts, and archaeologists, and arrange site visits accordingly. Work will be temporarily suspended in the area, and measures will be taken to secure the burial site and protect the remains from disturbance, including the placement of a twenty-five foot protective buffer around the burial site.

5. The NYSDOT Environmental Science Bureau (ESB), in coordination with the Region, will arrange for a qualified physical anthropologist to examine the remains. NYSDOT in coordination with FHWA will invite designated Indian tribal representative(s) to participate in the consultation process. Representatives will be determined on the basis of established Department contacts and identified areas of interest for tribal nations. The remains will not be removed until determined by the qualified physical anthropologist to be non-native.

6. NYSDOT, in consultation with the OPRHP/SHPO, Indian tribes and other identified consulting parties, will arrange for an archeologist to establish horizontal and vertical extent of the burial(s) and assess measures for avoiding the human remains if possible. The avoidance of human remains is the preferred choice.

7. Any new location or alignment developed to avoid the burial(s) will be subject to archaeological investigation, and the results will be provided to the OPRHP/SHPO, Indian tribes, and other consulting parties as appropriate for comment before the project proceeds in this area.

8. If the alignment is unchanged, a plan will be developed in coordination with FHWA, NYSHPO, the Indian tribal representatives, and other consulting parties as appropriate, to preserve the site and protect the burial(s) before the project proceeds in this area.

9. If removal and reburial of the remains is necessary, it will be undertaken in a manner agreed to by all involved parties. Temporary disposition of the remains until reburial will be determined in consultation with the Indian tribes, and other consulting parties as appropriate.

10. Any actions relating to the treatment, disposition, removal, or reburial of human remains will comply with all applicable State and Federal laws and regulations.

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[1] Last updated April 21, 2016.

[2] https://www.dot.ny.gov/main/business-center/engineering/specifications/updated-standard-specifications-us

[3] In Erie County, the discovery must be reported to the medical director.

Appendix D:

Project Contacts

Contact Personnel for I-81 Viaduct Project Archaeological Monitoring During Construction

Construction Project Manager (on-site) TO BE DETERMINED	Alternate TO BE DETERMINED
New York State Department of Transportation Mark Frechette, P.E. Project Director New York State Department of Transportation 333 East Washington Street Syracuse, NY 13202 315-428-4409 Mark.Frechette@dot.ny.gov Daniel P. Hitt, RLA Director, Office of Environment New York State Department of Transportation 50 Wolf Road, POD 4-1 Albany, NY 12232 518-457-4054 (Desk) 518-457-5672 (Office of Environment) Dan.Hitt@dot.ny.gov	Alternate Jonathan Adams, RLA Senior Landscape Architect New York State Department of Transportation Dulles State Office Building 317 Washington St Watertown, NY 13601 315-785-2341 Jon.Adams@dot.ny.gov Jessica Prockup Environmental Specialist Office of Environment New York State Department of Transportation 50 Wolf Road, POD 4-1 Albany, NY 12232 518-417-6642 Jessica.Prockup@dot.ny.gov
Federal Highway Administration Tricia Millington Area Engineer NY Division Tribal Nation Coordinator Federal Highway Administration Leo W. O'Brien Federal Building 11A Clinton Avenue, Suite 719 Albany, NY 12207 patricia.millington@dot.gov (518) 431-8844 Fax: (518) 431-4121	Alternate Robert M. Davies District Engineer Federal Highway Administration New York Division Leo W. O'Brien Federal Building 11A Clinton Avenue, Suite 719 Albany, NY 12207 Robert.Davies@dot.gov 518-431-8880

New York State Office of Parks Recreation and Historic Preservation John Bonafide Director, Technical Preservation Services Bureau Division for Historic Preservation Agency Historic Preservation Officer New York State Office of Parks Recreation & Historic Preservation Peebles Island State Park, PO Box 189 Waterford, New York 12188-0189 (518) 268-2166 john.bonafide@parks.ny.gov	Alternate Nancy Herter Archaeology Program Unit Coordinator New York State Parks, Recreation & Historic Preservation Peebles Island State Park, PO Box 189 Waterford, New York 12188-0189 (518) 268-2179 nancy.herter@parks.ny.gov
New York State Museum Dr. Christina Rieth New York State Archaeologist Division of Research and Collections New York State Museum 3118 Cultural Education Center Albany, NY 12230 christina.rieth@nysed.gov 518-402-5975	Alternate Dr. John P. Hart Director, Research and Collections Division New York State Museum 3140 Cultural Education Center Albany, New York 12230 john.hart@nysed.gov 518-474-5816
The Onondaga Nation Faithkeeper Anthony Gonyea DYODIHWASNYE'NHA Administration Building 4040 Route 11 Onondaga Nation via-Nedrow, NY 13120 Phone: 315-952-3109 Fax: 315-469-4717 stevethomas808@yahoo.com	Alternate Joseph Heath General Counsel 315-475-2559 Thane Joyal, Esq. 315-475-2559 thanejoyal@gmail.com
Law Enforcement Agency Onondaga County Sheriff's Office 407 S State St, Syracuse, NY 13202 315-435-3044	Alternate City of Syracuse Police Department 511 S. State Street Syracuse, NY 13202 315-442-5111

County Coroner Onondaga County Medical Examiner 100 Elizabeth Blackwell Street Syracuse, New York 13210 (315) 435-3800	Alternate N/A
Archaeological Consultant TBD	Alternate TBD

APPENDIX 3:

NYSDOT Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction

2002 *Haudenosaunee Protocol for Handling Discovery of Human Remains*

APPENDIX 3

NEW YORK STATE DEPARTMENT OF TRANSPORTATION'S PROCEDURES IN THE EVENT OF THE INADVERTENT DISCOVERY OF HUMAN REMAINS DURING CONSTRUCTION[1]

1. If a burial site, human remains, or bones thought to be human remains, are encountered during construction for a New York State Department of Transportation (NYSDOT) undertaking, the work will be stopped immediately and rescheduled to avoid disturbing the area. The remains will be left in place and protected from further damage.

2. In accordance with the current NYSDOT Standard Specifications, Section 107-01 D. Archaeological Salvage[2], the Engineer-in-Charge (EIC) will, through proper channels, notify appropriate Department personnel and other authorities. The EIC will report the discovery of human remains to the local police, and the county coroner having jurisdiction, or to the medical examiner, and will arrange immediate inspection of the site[3].

3. If the site is determined to be part of a criminal investigation, the police will notify the EIC when work in the area may resume.

4. If determined that the remains are not a police issue, the NYSDOT will notify the Federal Highway Administration (FHWA), the Office of Parks, Recreation and Historic Preservation/ State Historic Preservation Office (OPRHP/SHPO), appropriate Native Nation contacts, and archaeologists, and arrange site visits accordingly. Work will be temporarily suspended in the area, and measures will be taken to secure the burial site and protect the remains from disturbance, including the placement of a twenty-five foot protective buffer around the burial site.

5. The NYSDOT will arrange for a qualified physical anthropologist to examine the remains. NYSDOT in coordination with FHWA will invite designated Native Nation representative(s) to participate in the consultation process. Representatives will be determined on the basis of established contacts and identified areas of interest for Native Nations. The remains will not be removed until determined by the qualified physical anthropologist to be non-native.

6. NYSDOT, in consultation with the OPRHP/SHPO, Native Nations and other identified Consulting Parties, will arrange for an archeologist to establish horizontal and vertical extent of the burial(s) and assess measures for avoiding the human remains if possible. The avoidance of human remains is the preferred choice.

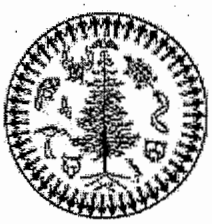
7. Any new location or alignment developed to avoid the burial(s) will be subject to archaeological investigation, and the results will be provided to the OPRHP/SHPO, Native Nations, and other Consulting Parties as appropriate for comment before the project proceeds in this area.

8. If the alignment is unchanged, a plan will be developed in coordination with FHWA, NYSHPO, the Native Nation representatives, and other Consulting Parties as appropriate, to preserve the site and protect the burial(s) before the project proceeds in this area.

9. If removal and reburial of the remains is necessary, it will be undertaken in a manner agreed to by all involved parties. Temporary disposition of the remains until reburial will be determined in consultation with the Native Nations, and other Consulting Parties as appropriate.

10. Any actions relating to the treatment, disposition, removal, or reburial of human remains will comply with all applicable State and Federal laws and regulations.

[1] Last updated April 21, 2016.
[2] https://www.dot.ny.gov/main/business-center/engineering/specifications/updated-standard-specifications-us
[3] In Erie County, the discovery must be reported to the medical director.



The Haudenosaunee Policies on this page are the official word of the Haudenosaunee Confederacy as promulgated by the Grand Council of Chiefs concerning cultural patrimony & repatriation.

Note:

From Kanatiyosh. The policies contain statements that are important to insure cultural sensitivity towards the Haudenosaunee. The statements are evidence of why some school projects, museums, private collections, sellers, governments, and etc., are not being culturally sensitive or respectful to the Haudenosaunee.

Haudenosaunee Policy on Human Remains

Haudenosaunee Beliefs

We have been taught that we bury our dead into the ground so that their bodies can become part of the scared Earth. We believe that we come from the Mother Earth and that the human remains that rest within the Earth are an important spiritual connection to the spirit of the Earth. The Earth is enriched by the dead as our flesh becomes part of the soil.

The souls of the dead have a path of destiny that they must follow. We refer to this as their journey after life. In this way, we feel that the dead are around us and hover over us as
we hold ceremonies or dances. We believe that the dead have power and it is dangerous to neglect the spiritual needs of the dead.

The protection of the human remains and associated graves, sacred burial sites and related objects from the graves of the Haudenosaunee are the responsibility of each generation of chiefs, clan mothers, and faithkeepers. We believe that the remains, the associated burial objects and the actual soil in which they rest is sacred. There is no acceptable excuses to justify the desecration of this sacred burial.

Violation of Our Spiritual Rights

Removing the remains from their eternal resting place is a great desecration to both the dead and the living. The disturbance, destruction, and theft of the dead is a violation of the religious and spiritual welfare of the Haudenosaunee.

As long as the human remains are disturbed, there will be spiritual consequences to our people. The desecration of the graves of our ancestors, no matter what the age of the burial, is a violation of our religious freedom.

Permits issued by the State of New York or any other local government, to allow anyone
to violate the sanctity of the graves of our ancestors can no longer be tolerated. In the past, our ancestors buried many objects along with the body with the belief that in the afterlife,
you will need all of those things that you need in this life.

All types of objects have been associated with burials, including decorated clothing, glass beads, shell beads, silver combs, tools and weapons, ceramic and metal cooking pots, wampum belts, strings of wampum, and a variety of personal items. The removal of these objects from the grave is a theft from the dead.

Violation of Our Human Rights

The remains of our dead are not "archaeological resources" that are subjects of study. They are human beings who once lived on this land. They had real lives and feelings. They had
spiritual expectations about their final resting places. To look at Native Peoples as objects rather than people is a gross violation of our human rights.

All graves and burial sites, Native or not, deserve respect. Our dead relatives deserve the basic human right to a dignified burial. We do not believe in the use of permanent headstones to mark graves of our ancestors and state law makes a difference between cemeteries and unmarked burials.

Our burial sites deserve to be considered hallowed ground, whether they are

marked or not. There has been a double standard in dealing with our people and non-Native remains. Non-Native grave sites are often afforded more protection than Native burials.

Despite the efforts of state agencies to identify Native grave locations, construction permits are issued nonetheless. Our dead deserve the same right to an eternal resting place as all other races and religions.

Violation of Our Treaty Rights

The unearthing of the remains of our ancestors from their eternal resting place is also a violation of the promises made to the Haudenosaunee under the terms of the Canandaigua
Treaty of 1794. By that treaty, the United States, including the State of New York, promised not to "disturb" the Haudenosaunee in the free use and enjoyment of their lands.

We have been on record protesting the desecration of our graves. The continual destruction of Native graves, the stealing of the Native remains and the looting of burial objects causes us serious mental, emotional, and spiritual harm.

Our people are continually upset by these events and we have been forced to adjust our spiritual traditions to accommodate outside developments. The desecration of our dead violates the mutual respect promised by the United States as they pledged a firm and permanent friendship between our peoples.

The treaty also promised to remove the cause of complaint that upsets our peace. We therefore make it clear that the desecration of the graves of our ancestors causes great harm to our people and the United States and State of New York have an obligation to protect the general welfare of our people as promised in the legally binding treaties.

4.7 Protocol for Handling Discovery of Human Remains

	Known Burials	Unidentified Burials
When to contact?	**Intentional excavation** At the earliest time in decision-making process.	**Inadvertent Discovery** Upon discovery.
Which Nation to contact?	If find is within existing Nation boundary, contact that Nation's Cultural Resource representatives. If the find is within the traditional land use area (fifty mile radius from the current nation territory, contact the closest Nation's Cultural Resource Representative. If the find is within the aboriginal territory of each nation, as shown on the attached map, contact the Nation within that territory. For finds located within fifty miles on either side of the boundary lines shown on the map, contact the Cultural Resource Representatives of both Nations.	
Who to contact?	Haudenosaunee Cultural Resource Representatives HSCBRR	Haudenosaunee Cultural Resource Representatives HSCBRR
How to contact?	Contact list is provided.	
Information Required	Brief description of the find or potential find; site map and any information on the known cultural history of the area and summary of nearby archaeological findings.	
	Nation will send a representative to review the site.	Company must hire a Native American on-site observer.
Next steps	***Non-disturbance of burials is preferred.*** If after proper consultation, the remains must be removed, we prefer to have them reburied close to their original location as possible, provided the future sanctity of the grave can be assured. ***No remains should be removed without proper cultural protocols.*** If no safe local burial ground can be offered, the Haudenosaunee will reclaim the remains for reburial at an undisclosed location. The local government /state agency/developer must pay all of the costs for such reburial. All objects associated with the original burial must be reburied as well. All of the soil in the immediate area of the burial should also be placed in the new grave.	
Time Frame	30 to 45 days	As soon as possible

APPENDIX 4:

Roles and Responsibilities in Construction

APPENDIX 4
ROLES AND RESPONSIBILITIES IN CONSTRUCTION

The purpose of this appendix is to define the roles of those responsible for carrying out commitments specified in this Programmatic Agreement (Agreement).

The role of the **NYSDOT Office of Environment (OOE)** is to assist the FHWA in carrying out Section 106 responsibilities for the Project, including oversight and management of archaeological investigations, and initiating consultation regarding archaeological resources identified through machine-aided excavations and archaeological monitoring during construction among the FHWA, the SHPO, and the Onondaga Nation for Native American sites.

NYSDOT Engineer or Engineer in Charge (EIC) or his/her designee, is the Engineer representing the NYS Department of Transportation having direct supervision of the execution of the construction contract(s) under the direction of the Regional Director. The EIC or his/her designee is responsible for ensuring that construction work is stopped or slowed promptly upon request by the Archaeologist or Native Nation Monitor (if no Archaeologist is present).

NYSDOT Construction Environmental Coordinator (CEC), or equivalent, oversees the work of the Archaeologist on the construction site and coordinates workflows with the Construction Group and Office of Environment.

NYSDOT (Regional) Operations, or equivalent, will provide equipment and necessary personnel to assist in the machine-aided archaeological survey work.

Archaeological Consultant (Archaeologist) is the individual, firm, or corporation hired by the NYSDOT to provide professional archaeologists, including a Principal Investigator meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology (36 CFR Part 61) with demonstrated experience on projects of a similar scale and complexity, including supervisory experience for archaeological monitoring during construction in urban areas. Regional experience in the archaeology of central New York is preferred.

The Archaeological Consultant will provide qualified personnel required to perform the work as specified in the *Phase IB Archaeological Survey Work Plan: Plan for Phase IB Archaeological Survey and Archaeological Monitoring during Construction Including Data Recovery*, October 2017 (*Phase IB Work Plan*) and the approved Construction Phase Archaeological Work Plan. The staff required to perform the work will include, at a minimum, a Principal Investigator and team including the following positions:

- **Principal Investigator (PI)**: The PI will be responsible for the archaeological research, fieldwork and monitoring and for preparing and submitting archaeological reports. All archaeological investigators and Native Nation Monitor(s) will be under the direct supervision of the PI.

- **Crew Chief(s)**: Under the direction of the PI, one or more Crew Chiefs will be responsible for the daily on-site supervision of archaeological Field Technicians for machine-aided testing and monitoring during construction, and for coordinating archaeological investigations with the EIC or his/her designee, Construction Contractor and/or subcontractors. In addition, the Crew Chiefs will ensure that the EIC or his/her designee is promptly informed of and approves any request for a temporary halt in construction, whether requested by the Archaeologist or the Native Nation Monitor(s), as per the approved *Phase IB Work Plan,* to allow the Archaeologist and Native Nation Monitor(s) to examine potential cultural materials and features.

- **Field Technician (FT)**: The FT will assist in the field and laboratory for processing artifacts. All work by the FT will be performed under the direct supervision of the Crew Chief.

Onondaga Nation Designated Section 106 Representatives are the individuals included on the "List of Federally-Recognized Tribal Contacts for Section 106 Consultation for NYSDOT-FHWA projects".

Native Nation Monitor(s) will be selected and provided by the Onondaga Nation and will work in coordination with the Archaeologist as part of the team responsible for machine-aided testing and archaeological monitoring during construction, as identified in the approved *Phase IB Work Plan*. The Native Nation Monitor(s) will communicate to the Crew Chief or the PI (if on-site) any request for a temporary halt in construction to examine potential cultural materials, features, or human remains.

The Native Nation Monitor(s) will be responsible for coordinating monitoring activities with the EIC or his/her designee, Construction Contractor and/or subcontractors in locations where the FHWA has determined Native Nation monitoring is warranted outside of archaeological monitoring during construction.

Construction Contractor is the individual, firm, or corporation undertaking the execution of the construction work under the terms of the contract and acting directly or through his, her, their, or its agents or employees. The Contractor is responsible for facilitating the archaeological investigations.

Construction Manager is the Construction Contractor's designated representative who leads construction activities of the Contract, including overall construction oversight, assignment of the construction workforces, and coordination of the construction workforces.

Equipment Operator is the person(s) operating construction equipment.

APPENDIX 5:
Native Nation Consultation

APPENDIX 5
NATIVE NATION CONSULTATION

The Federal Highway Administration (FHWA) in coordination with the New York State Department of Transportation (NYSDOT) will carry out Section 106 consultation with the New York State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP), and the Onondaga Nation through the final design and construction phases of the Project to complete the identification and evaluation of archaeological resources within the Project's Area of Potential Effects (APE), and to consider measures to avoid, minimize or mitigate potential adverse effects on any National Register (NR) eligible archaeological resources identified through machine-aided excavation and archaeological monitoring during construction.

The NYSDOT will inform the SHPO, FHWA, and Onondaga Nation of any design modifications or changes in scope as the Project progresses through Final Design and Construction and will make a good faith effort to provide timely and informative communication during the Construction phases of the Project.

Native Nation Monitors

In addition to consultation with the Onondaga Nation's Designated Section 106 Representatives (Onondaga Nation), the NYSDOT will establish procedures to ensure that the Native Nation Monitors selected by the Onondaga Nation are provided opportunities to fully engage in future archaeological investigations for the Project, as outlined in the approved *Phase IB Archaeological Survey Work Plan: Plan for Phase IB Archaeological Survey and Archaeological Monitoring during Construction Including Data Recovery*, October 2017 (*Phase IB Work Plan*) and approved *Construction Phase Archaeological Work Plan.* The FHWA and NYSDOT defer to the Onondaga Nation to designate Native Nation Monitor(s) at their discretion. The individual(s) selected by the Onondaga Nation to serve as Native Nation Monitors are not required to meet the standards defined in Stipulation II A of the Agreement.

In the event that the Onondaga Nation chooses not to provide Native Nation Monitor(s) for machine-aided testing or archaeological monitoring during construction or if Native Nation Monitor(s) are unavailable to perform monitoring activities at any/all locations, Section 106 commitments for upcoming archaeological investigations can be fully met by the NYSDOT through the utilization of professional archaeologists meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology (36 CFR Part 61) (henceforth referred to as "Archaeologist").

Both the Archaeologists and Native Nation Monitor(s) will have access to areas that are deemed by the NYSDOT Engineer in Charge (EIC) or his/her designee to be safe locations for non-construction personnel for the purpose of archaeological monitoring at construction sites identified in the approved *Construction Phase Archaeological Work Plan.* Based on their knowledge of Haudenosaunee culture, the Native Nation Monitors will work in coordination with the Archaeological Consultant's team to identify any Native American cultural artifacts, either because they are potentially National Register eligible, as per Section 106 of the National Historic Preservation, or because they are potentially related to human remains or indicative of a burial site. As part of this coordinated effort, the Native Nation Monitors will inform the Archeologist on site of any request for the Construction Contractor(s) to halt or slow work for closer inspection of potential Haudenosaunee cultural artifacts or human remains. The Archaeologist will

promptly convey the Native Nation Monitor's request to the EIC or his/her designee, who will ensure that the requested action is taken. The Native Nation Monitors will also inform the Archaeologist when coordination with the Onondaga Nation may be needed before recommending further investigation of intact archaeological deposits or upon the discovery of a potential burial site.

Though it will be up to the Onondaga Nation to establish its own internal procedures for coordination with the Native Nation Monitors in the field, the NYSDOT will contact the Onondaga Nation's Designated Section 106 Representatives to provide updates for work in progress including an end of field letter and draft Phase IB Archaeology Survey Report for each construction area identified for archaeological monitoring. As part of ongoing Section 106 consultation, the NYSDOT, in coordination with FHWA and in consultation with the SHPO, will consider the Onondaga Nation's comments and recommendations before approving and distributing final reports as specified in Stipulation IV of the Agreement.

On Site Requirements for Native Nation Monitors

The Native Nation Monitors, as well as Archaeologists, will be required to follow certain procedures and protocols during construction.

- The Native Nation Monitor(s) will follow the health and safety plan for the Project under the oversight of the EIC or his/her designee of the construction site.
- The Native Nation Monitor(s) will monitor locations in accordance with the approved *Phase IB Work Plan* and approved *Construction Phase Archaeological Work Plan* and will not direct the contractor to conduct field operations for the purposes of archaeological investigation at new locations.
- The Native Nation Monitor(s) will report to the established construction field office or other location as specified by the EIC or his/her designee daily and attend the Construction Contractor meeting(s) as requested and at a frequency established by the Construction Contractor(s), to learn about the scope of work and location of work planned for each day/week.
- If the Native Nation Monitor(s) fails to report to the construction site on time as specified by the EIC/Construction Manager or his/her designee, construction activities will progress as scheduled, and the Native Nation Monitor(s) may be restricted from accessing the construction site until the EIC/Construction Manager or his/her designee determines it is safe to do so.
- The Native Nation Monitor(s) will document work conducted each day, including but not limited to information such as a description of the work conducted each day at each location, the hours worked, and the tasks performed. The daily work report will include the location monitored and the presence or absence of any cultural materials encountered. The daily report will be shared with the EIC/Construction Manager or his/her designee, NYSDOT OOE, and the Archaeologist.

Compensation

The Onondaga Nation will be compensated for the services of Native Nation Monitor(s) through a separate contractual agreement and will receive payment under the terms of that agreement. A sample contract is included in **Appendix 8** of this Agreement.

- As determined by the FHWA, payments to the Onondaga Nation for archaeological monitoring services as reported to the EIC/Construction Manager or his/her designee, NYSDOT OOE, and the Archaeologist are eligible for federal reimbursement.
- In addition, the cost of assistance as needed for the relocation and reinterment of human remains determined or presumed to be Native American are eligible for federal reimbursement.

Timeframes for Archaeological Field Investigations

As indicated in the approved *Phase IB Archaeological Survey Work Plan: Plan for Phase IB Archaeological Survey and Archaeological Monitoring during Construction Including Data Recovery*, October 2017 (*Phase IB Work Plan*), machine-aided testing, particularly in areas that require the removal of existing pavement, will be scheduled to begin immediately prior to the start of construction at each designated location for the purpose of minimizing disruption to existing land use and community activities. Archaeological field investigations for machine-aided testing and archaeological monitoring during construction will proceed in accordance with the timeframes specified in the approved *Phase IB Work Plan* and the approved *Construction Phase Archaeological Work Plan.*

As defined in the NYSDOT Standard Specifications, Section 101-02 Definitions of Terms:

> **Calendar Day** means "every day shown on the calendar", and a
>
> **Work Day** means "a calendar day, on which weather and other conditions not under the control of the Contractor, will permit construction operations on the principal item or items of work which would normally be in progress at that time to proceed for the major part of the day."

For the purposes of this Agreement, timeframes are noted in calendar days, unless otherwise specified.

Machine-Aided Testing

The Native Nation Monitor(s) will provide timely input to assist the Archaeologist in the field identification of Native American cultural artifacts and features.

- If no archaeological resources are identified by machine-aided testing, the Archaeologist will submit an end-of-field (EOF) letter to the NYSDOT within two (2) weeks of the completion of fieldwork. The NYSDOT will provide the EOF letter to the SHPO, Onondaga Nation, and FHWA with a request for review and comments within fifteen (15) days.
- If the Archaeologist, in coordination with the Native Nation Monitor(s), recommends additional investigation of one or more archaeological sites to determine National Register eligibility, the Archaeologist will be allowed up to five (5) additional days to prepare and submit to NYSDOT a Phase II Work Plan for each site. The NYSDOT will provide the EOF letter and Phase II Work Plan(s) to the SHPO, Onondaga Nation, and FHWA with a request for review and comments within thirty (30) calendar days.
- The Archaeologist will begin Phase II field investigations immediately upon approval of the Phase II Work Plan(s) by the NYSDOT and will complete the fieldwork for each site within twenty (20) work days of approval. The Archaeologist will conduct Phase II investigations in coordination with

Native Nation Monitor(s) for Native American sites, or Native American components of multicomponent sites, but may proceed with Phase II fieldwork on schedule if the Native Nation Monitor(s) is not present.

Archaeological Monitoring during Construction

The timing of archaeological monitoring during construction will be determined by construction schedules for each construction phase of the Project. Protocols for archaeological monitoring during construction are depicted in the attached flowchart (**Attachment 1**) and described below:

- If the Archaeologist, in coordination with the Native Nation Monitor(s) identifies potential cultural artifacts or features exposed by construction activity, the Archaeologist will request a temporary suspension of work limited to one hour for each area within an approximately 20-foot (6.1-meter) radius for initial inspection of the open excavation.
- Following initial inspection, if the Archaeologist in coordination with the Native Nation Monitor(s) identifies the potential cultural artifact(s) or feature(s) to be modern or to be historic with no potential to meet the criteria for National Register eligibility, the Archaeologist will notify construction personnel that work can continue.
- If the cultural material is identified as potentially National Register eligible, the Archaeologist may request an extension of the work stoppage to further evaluate the cultural material in coordination with the Native Nation Monitor(s). The extension may last up to, but no longer than four hours, not including the one hour for initial inspection. Immediately upon completing this evaluation of the cultural material, the Archaeologist will notify the NYSDOT Office of Environment (OOE) with a preliminary assessment of National Register eligibility.
- The timeframe outlined above would not apply if the Archaeologist in coordination with the Native Nation Monitor(s) identifies the presence of human remains, or potential remains. In that case, the temporary work stoppage would last substantially longer to allow time for consultation among the SHPO, Onondaga Nation, FHWA, and NYSDOT to determine appropriate next steps.
- If the Archaeologist, in coordination with the Native Nation Monitor(s), recommends additional investigations to determine National Register eligibility, the Archaeologist will notify the NYSDOT, and the NYSDOT will consult with the SHPO, Onondaga Nation, and FHWA. If approved, sampling or recovery efforts will be limited to eight hours for each individually identified resource, including Native American cultural artifacts. In the case of exposed canal or canal-related features, eight hours per 50 linear feet (15 meters) will be allowed.
- The Archaeologist will implement Data Recovery procedures immediately upon approval by the NYSDOT if the site is determined National Register eligible and Data Recovery is the agreed-upon course of action as determined though consultation among the SHPO, Onondaga Nation, FHWA, and NYSDOT. Once initiated, the Archaeologist (in coordination with Native Nation Monitor(s) for Native American sites) will complete Data Recovery activities at each site within no more than 15 work days of the start of Data Recovery fieldwork, or as specified in the approved Archaeological Data Recovery Plan and Stipulation VI of this Agreement.

The Archaeologist, in coordination with the Native Nation Monitor(s), will submit an EOF letter to the NYSDOT within five (5) days of the completion of Data Recovery fieldwork. The NYSDOT will provide the EOF letter to the SHPO, Onondaga Nation, and FHWA with a request for comments on the preliminary results, recommendations, and timeframe for the preparation of a Phase III Data Recovery report within 15 calendar days of receiving the EOF letter.

Section 106 Consultation

Archaeological Resources

The formal identification and evaluation of archaeological resources will be conducted through consultation among the SHPO, FHWA, NYSDOT, and the Onondaga Nation's designated Section 106 representatives, based on information provided by the Archaeologist in coordination with the Native Nation Monitor(s) in EOF letters and reports.

- During ongoing field investigations for machine-aided testing and archaeological monitoring during construction, the NYSDOT will provide EOF letters and Phase II Work Plans to the SHPO, Onondaga Nation, and FHWA for a 15-day review and comment period.
- Following the end of fieldwork, the NYSDOT will provide draft Phase IB and Phase III Data Recovery reports to the SHPO, Onondaga Nation, and FHWA for a 30-day review and comment period.

Potential Discovery of Human Remains

Based on the results of research conducted for the *Phase IA Archaeological Sensitivity Assessment,* September 2016 and through consultation with the Onondaga Nation, the approved *Phase IB Work Plan* documents the potential for Native American human remains within the Project's APE. The Onondaga Nation advised that all areas along the historic alignment of Onondaga Creek and other historic watercourses should be considered sensitive for the potential to contain human burials. As a result, the sampling strategy for machine-aided testing in advance of construction, as outlined in the approved *Phase IB Work Plan*, includes locations along the historic alignment of Onondaga Creek to determine if potential human burials, or other archaeological resources, are present in these areas.

In addition, the Onondaga Nation noted the potential for partial human remains to be present in fill material transported from other areas to locations throughout the APE which have not been specifically identified as areas of sensitivity. With the assistance of Archaeologists and Native Nation Monitors, the NYSDOT will take precautions to ensure that any human remains that may be encountered during construction are properly identified and protected from further disturbance until appropriate actions are determined through consultation among the Onondaga Nation, SHPO, FHWA, and NYSDOT.

- Any human burial site, human remains, or potential human remains discovered during machine-aided archaeological testing or during construction will be treated with dignity and respect.
- Upon the discovery of human remains or potential human remains, the NYSDOT has an obligation to report the discovery to the appropriate legal authorities. The NYSDOT has no jurisdiction over the burial site until those officials have determined that the remains do not warrant further investigation on their part.

- If the Archaeologist, in coordination with the Native Nation Monitors, reports the discovery of human remains, or potential human remains, to the NYSDOT during machine-aided testing or archaeological monitoring during construction, the NYSDOT OOE will immediately notify the SHPO, FHWA and the Onondaga Nation's designated Section 106 representatives.
- The NYSDOT OOE will also contact the SHPO, FHWA and the Onondaga Nation's Designated Section 106 Representatives if the NYSDOT EIC or his/her designee and/or Construction Environmental Coordinator (CEC) reports the discovery of human remains, or potential human remains, during construction in any location where there is no Archaeologist or Native Nation Monitor present.
- Following the *NYSDOT Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction* (**Appendix 3**) and the *2002 Haudenosaunee Protocol for Handling Discovery of Human Remains* [(hereafter "2002 Haudenosaunee Protocol") **Appendix 3**], the FHWA, in coordination with the NYSDOT, will carry out consultation with the Onondaga Nation and the SHPO to consider measures to avoid, minimize, or mitigate effects on any intact burial site and to consider appropriate treatments for human remains or partial human remains discovered in fill material or disturbed soils. Avoidance is the preferred option to the extent practicable.
- The above-referenced timeframes for Section 106 consultation during construction will not apply to consultation to determine an agreed-upon course of action following the discovery of a human burial site or confirmed human remains.
- If requested by the Onondaga Nation, the FHWA and the NYSDOT will assist the Onondaga Nation in the relocation and reinterment of human remains determined or presumed to be Native American.

The NYSDOT will treat all information regarding the discovery of human remains as confidential and will not release information regarding the discovery or reburial of human remains to the public.

ATTACHMENT 1: ARCHAEOLOGICAL MONITORING DURING CONSTRUCTION PROCESS

STEP 1: IDENTIFICATION	Archaeological Monitoring will be conducted during construction activities in areas identified in the approved *Phase IB Work Plan* and *Construction Phase Archaeological Work Plan*.	If no potential cultural artifacts or features exposed by construction activity, then construction will proceed. Results will be memorialized in *Daily Work Reports*.		If potential cultural artifacts or features exposed by construction activity, **go to Step 2: Initial Inspection**.
STEP 2: INITIAL INSPECTION	If potential cultural artifacts or features exposed by construction activity, the Archaeologist will request a temporary suspension of work limited to **1 hour** for each location.	If the Archaeologist in coordination with the Native Nation Monitor(s) identifies the potential cultural resource to be modern or otherwise have no potential to meet the criteria for National Register of Historic Places (NRHP) eligibility, then construction will proceed. Results will be memorialized in *Daily Work Reports*.**		If the cultural material is identified as potentially NRHP eligible, **go to Step 3: Further Evaluation**.
STEP 3: FURTHER EVALUATION OF NRHP ELIGIBILITY	The Archaeologist may request an extension of the work stoppage to further evaluate the cultural material in coordination with the Native Nation Monitor(s). The extension may last up to, but no longer than **4 hours**, not including the one hour for initial inspection.	Immediately upon completing this evaluation, the Archaeologist will notify the NYSDOT Office of Environment (OOE) with a preliminary assessment of National Register eligibility. The NYSDOT will consult with the SHPO, Onondaga Nation, and FHWA.**	If the cultural material is determined to not meet the Criteria for National Register Eligibility, then construction will proceed. Results will be memorialized in *Daily Work Reports*.	If additional investigation is required to further evaluate National Register Eligibility, **go to Step 4: Additional Investigation**.
STEP 4: ADDITIONAL INVESTIGATION & NRHP ELIGIBILITY DETERMINATION	If additional investigation is required to further evaluate National Register Eligibility, sampling or recovery efforts will be limited to **8 hours** for each individually identified resource. In the case of exposed canal or canal-related features, eight hours per 50 linear feet (15 meters) will be allowed.	Immediately upon completing this evaluation of the cultural material, the Archaeologist will notify the NYSDOT Office of Environment (OOE) with a preliminary assessment of NRHP eligibility. The NYSDOT will consult with the SHPO, Onondaga Nation, and FHWA. **	If the cultural material is determined to not meet the Criteria for NRHP eligibility, then NYSDOT will consult with the SHPO, Onondaga Nation, and FHWA. If parties concur, construction will proceed. Results will be memorialized in Daily Work Reports.**	If the cultural resource is determined to be NRHP eligible, go to **Step 5: Consultation and Treatment Plan**.
STEP 5: CONSULTATION & TREATMENT PLAN	If the FHWA determines that the Project may have an adverse effect on a NRHP eligible archaeological resource, the FHWA, in coordination with the NYSDOT, will consult with the SHPO, and with the Onondaga Nation for Native American sites, to explore measures to avoid, minimize, or mitigate adverse effects. **	If adverse effects cannot be avoided, and it is determined through consultation that Data Recovery is an appropriate treatment, the NYSDOT will direct the Archaeologist to prepare an Archaeological Data Recovery Plan (DRP) for each affected property. **Go to Step 6: Data Recovery.**	If adverse effects cannot be fully avoided, and Data Recovery is not determined appropriate, the FHWA will continue consultation to determine alternate mitigation and will prepare an archaeological treatment plan for each site.	The FHWA, in coordination with NYSDOT, will distribute the treatment plan or DRP for a 15-calendar day review and comment by the SHPO, and by the Onondaga Nation for Native American sites. **
STEP 6: DATA RECOVERY	The Archaeologist will implement Data Recovery procedures as soon as feasible upon approval of the DRP. Once initiated, the Archaeologist (in coordination with Native Nation Monitor(s) for Native American sites) will complete Data Recovery activities in accordance with the DRP.	The Archaeologist, in coordination with the Native Nation Monitor(s), will submit an EOF letter to the NYSDOT within five (5) days of the completion of Data Recovery fieldwork. The NYSDOT will provide the EOF letter to the SHPO, Onondaga Nation, and FHWA within 15 calendar days of receiving the EOF letter.	If parties concur with the findings in the EOF Letter, construction will proceed.**	As specified in the approved DRP, the Archaeologist will prepare a Phase III Data Recovery report following the resumption of construction activities.

* **HUMAN REMAINS:** The timeframe outlined above would not apply if the Archaeologist in coordination with the Native Nation Monitor(s) identifies the presence of human remains, or potential remains. In that case, the temporary work stoppage would last substantially longer to allow time for consultation among the SHPO, Onondaga Nation, FHWA, and NYSDOT to determine appropriate next steps.

** **DISPUTE RESOLUTION FOR ATTACHMENT 1:** At different steps in this process there are points of consultation between NYSDOT, SHPO, Onondaga Nation, ACHP, and FHWA. Should there not be agreement between all parties at decision-making points, all parties will follow the below process for dispute resolution.

Should any party object via electronic notification or phone to FHWA, regarding the manner in which the terms of Attachment 1 are carried out, FHWA will immediately notify the other signatory parties of the objection and proceed to consult with the objecting party to resolve the objection. FHWA will honor the request of any signatory party to participate in the consultation and will take any comments provided by such parties into account. The FHWA shall establish a reasonable time frame for such consultations.

If the objection is resolved through consultation, FHWA may authorize the disputed action to proceed in accordance with the terms of such resolution. FHWA shall take into account any comments from the other signatory parties to Attachment 1 in reaching a final decision regarding the objection. FHWA's responsibility to carry out all actions under this Agreement that are not the subjects of the objection shall remain unchanged. FHWA shall provide all other signatory parties to this Attachment with an electronic copy of its final decision regarding any objection addressed pursuant to this Attachment.

APPENDIX 6:

Coordination and Communication Protocols in Construction

Protocols for Communication in Construction (Flowchart)

APPENDIX 6
COORDINATION AND COMMUNICATION PROTOCOLS IN CONSTRUCTION

The purpose of this appendix is to establish protocols for coordination and communication among the Archaeologist, Native Nation Monitor(s), Engineer in Charge (EIC), and Equipment Operator during machine-aided testing and archaeological monitoring during construction, as specified in the approved *Phase IB Archaeological Survey Work Plan: Plan for Phase IB Archaeological Survey and Archaeological Monitoring during Construction Including Data Recovery*, October 2017 (*Phase IB Work Plan*) and approved *Construction Phase Archaeological Work Plan.* Based on available information, the Project will be constructed under multiple construction contracts over a six-year period, with the potential for overlapping construction phases and ongoing construction activities in multiple locations at any given time.

To ensure that commitments made in the Programmatic Agreement (PA) are met, the Archaeologists and Native Nation Monitor(s) will work in cooperation with the New York State Department of Transportation (NYSDOT) and the Construction Contractor to implement effective communication protocols, both before and during construction of the Project. The NYSDOT will defer to the Onondaga Nation Designated Section 106 Representatives (Onondaga Nation) to coordinate with their designated Native Nation Monitor(s) to inform them of when the work is scheduled to begin.

Machine-Aided Testing

To the extent possible, machine-aided testing will be carried out in advance of construction and implemented in priority order based on the Project's construction phasing and anticipated schedule, with the goal of completing machine-aided testing prior to the start of construction in that area. The NYSDOT OOE will provide notification regarding construction milestones to the Archaeologist and the Onondaga Nation as the information becomes available, as specified in Stipulation IV.C. of this Agreement. Milestones may include, but are not limited to, the geographical division of construction contracts, planned progression of construction phasing, estimated timeframe for each construction contract, award of construction contracts, and construction start dates. Estimated timelines for construction will be subject to change depending on the construction start date(s) and conditions during the construction period. As the NYSDOT gains access to locations for testing, the Office of Environment (OOE) will notify the Archaeologist and the Onondaga Nation of the general location(s) of machine-aided testing two weeks in advance, with a specific location update no less than 12 hours prior to ground-breaking. The NYSDOT will defer to the Onondaga Nation to notify Native Nation Monitor(s) when the work is scheduled to begin.

If human remains (or potential human remains) are encountered during machine-aided testing, the NYSDOT OOE, in coordination with the Federal Highway Administration (FHWA), will contact the New York State Historic Preservation Office (SHPO) and the Onondaga Nation to initiate consultation in accordance with the *NYSDOT Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction* (**Appendix 3**) and the 2002 *Haudenosaunee Protocol for Handling Discovery of Human Remains* (**Appendix 3**).

Communication Prior to Construction

The NYSDOT OOE will provide notification regarding construction milestones to the Archaeologist and the Onondaga Nation as the information becomes available, as specified in Stipulation IV.C. of this Agreement.

Milestones may include, but are not limited to, the geographical division of construction contracts, planned progression of construction phasing, estimated timeframe for each construction contract, award of construction contracts, and construction start dates. Estimated timelines for construction will be subject to change depending on the construction start date(s) and conditions during the construction period.

Prior to the start of construction, the NYSDOT will implement standard practices, including holding a preconstruction meeting and an environmental preconstruction meeting to inform the Construction Contractor(s) about environmentally sensitive areas, including potential cultural resources. The Archaeologist and Native Nation Monitors will be invited to attend the meeting. Topics for discussion will include a discussion of the requirements and considerations for archaeological monitoring as described in the Section 106 Programmatic Agreement, the approved *Construction Phase Archaeological Work Plan(s),* and construction plans and associated special notes for the Project. In addition, the preconstruction meeting will include a discussion of the communication protocol specified in the NYSDOT Standard Specifications, Section 107-01 - Laws, Rules, Regulations and Permits, D. Archeological Salvage*:*

> "Whenever, during the course of construction, historical or prehistoric objects or human remains are encountered, such objects shall not be destroyed or moved. The Construction Contractor shall stop work to avoid disturbing such areas and notify the Engineer immediately.
>
> The Engineer will notify the appropriate Department personnel and other authorities and arrange to have an immediate inspection of the site conducted."

At the preconstruction meeting or prior to the start of the applicable construction activities, and subject to approval by the EIC or his/her designee, the NYSDOT will provide information on the Construction Contractor's proposed schedules and methods of construction for areas identified in the *Construction Phase Archaeological Work Plan*(s). This information may include details such as the schedule, sequence of operations, materials, equipment, and excavation support systems to allow the Archaeologist to plan for implementation of the approved *Construction Phase Archaeological Work Plan*.

To facilitate scheduling for archaeological and Native Nation monitoring during construction, the NYSDOT OOE will provide notice to the Archaeologist and to the Onondaga Nation at least one week in advance of the scheduled start of construction in areas subject to archaeological monitoring. The NYSDOT will defer to the Onondaga Nation to notify Native Nation Monitor(s) when the work is scheduled to begin. Once construction is underway, the NYSDOT EIC or his/her designee or the Construction Contractor will provide weekly updates of the schedule for upcoming construction in areas identified for archaeological monitoring or Native Nation monitoring.

The Construction Contractor will review the applicable approved *Construction Phase Archaeological Work Plan* as well as the construction monitoring locations identified on the plan sheets before the start of construction at those locations.

Communication Protocols during Construction

Archaeological monitoring during construction requires the Archaeologist and Native Nation Monitors to work in close coordination with the Construction Manager, the Equipment Operator, and the EIC or his/her designee, who will have oversight of the construction site(s) and will ensure compliance with on

site safety protocols. Protocols for communication during construction are depicted in the attached flowchart (**Attachment 2**).

- The EIC or his/her designee in coordination with the Construction Contractor will notify the Archeologists and the Native Nation Monitor(s) in advance of the location and planned construction activities for the day within a timeframe and in the manner agreed upon during the preconstruction meeting. This notice may include a request to check in at the field office at a specified time. If the Archaeologists or the Native Nation Monitor(s) fail to report to the field office or other previously determined location by the time specified, the EIC or his/her designee / Construction Manager may proceed with the day's planned construction activities without the presence of the Native Nation Monitor(s), provided the EIC or his/her designee and/or the Construction Contractor have contacted the Onondaga Nation as specified herein.
- The EIC or his/her designee may direct the movement and actions of the Archaeologists and Native Nation Monitor(s) to ensure that safety standards and protocols are maintained while observing construction excavations and entering trenches to inspect potential archaeological resources.

The Archaeologist will coordinate, collaborate, and exchange views with Native Nation Monitors as part of the team, as described in this **Appendix 5: Native Nation Consultation**. The Native Nation Monitor(s) will provide input to the Archaeologist on the field identification of potential Haudenosaunee cultural artifacts, features, or potential human remains encountered and may also make recommendations for the Archaeologist to request a temporary halt in construction activities.

The Archaeologist, specifically the Principal Investigator or Crew Chief on site, will serve as the point-of-contact for coordination with the EIC or his/her designee, Construction Manager, or Equipment Operator for the purpose of communicating requests to halt or slow construction in a specific location to allow for the inspection of potential archaeological resources or cultural materials, further investigations, or documentation of identified archaeological features or sites, as outlined in the approved *Phase IB Work Plan* and approved *Construction Phase Archaeological Work Plan.* The Onondaga Nation will designate a single point-of-contact for coordination with the EIC or his/her designee, Construction Manager, or Equipment Operator for the purpose of communicating requests to halt or slow construction in a specific location to allow for the inspection of potential archaeological resources or cultural materials in areas designated only for Native Nation Monitoring.

The Crew Chief will ensure that the EIC or his/her designee is fully informed and approves any request for a temporary halt in construction, whether requested by the Archaeologist or the Native Nation Monitor(s), as per the approved Phase IB Work Plan, to allow the Archaeologist and Native Nation Monitor(s) to examine potential cultural materials and features.

The Archaeologist will clearly communicate to the EIC or his/her designee or the Construction Contractor(s) when work may resume or if further delay is anticipated pending coordination with the NYSDOT OOE for consultation with the SHPO, the Onondaga Nation, and the FHWA. At the close of business each work day, the Native Nation Monitor(s) will submit a daily work report to the Construction Contractor, the NYSDOT OOE and the Archaeologist, following a format specified in the terms of the contractual agreement for the compensation of Native Nation Monitors.

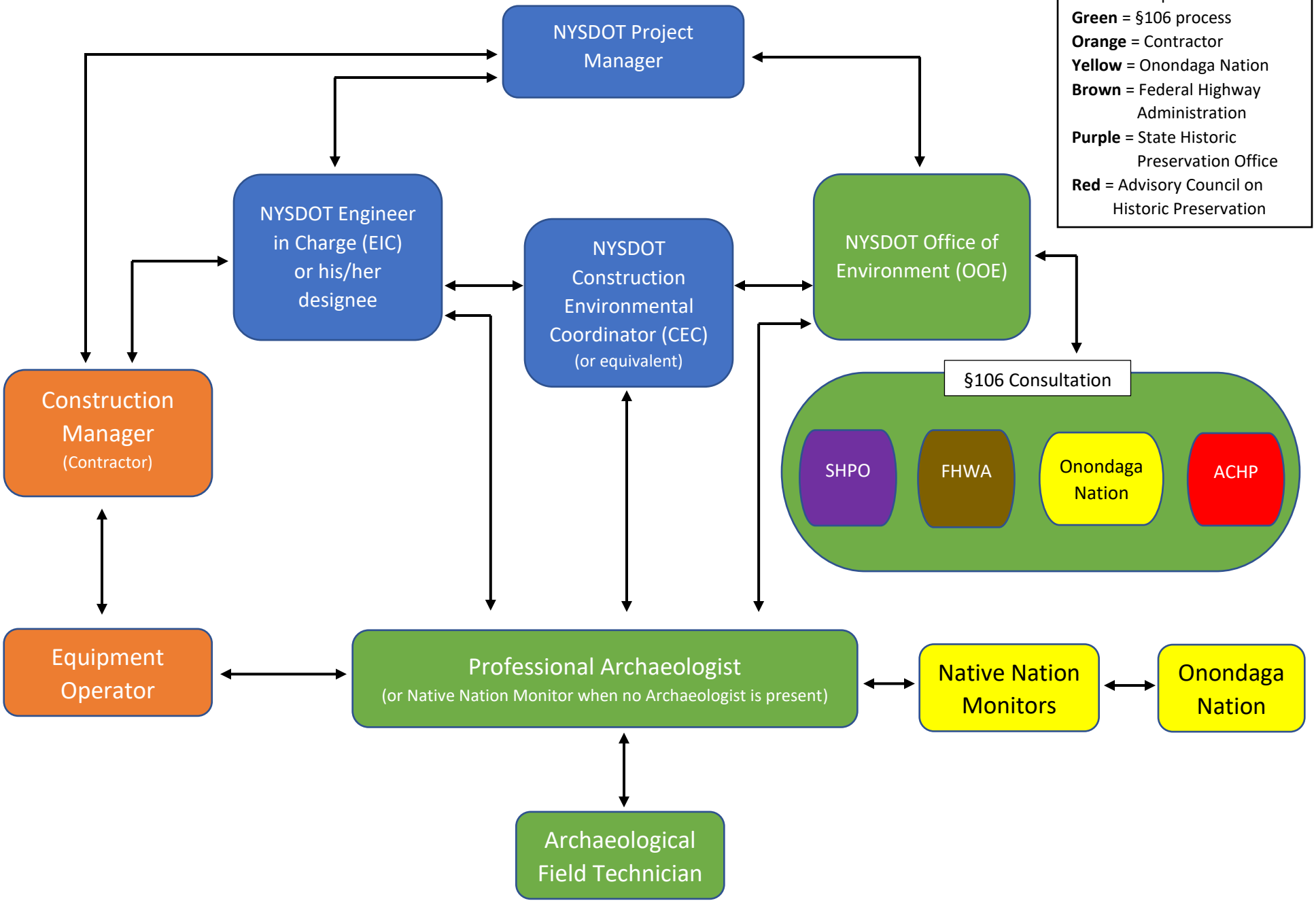
The Archaeologist will share with the Native Nation Monitor(s) the results of archaeological monitoring at any location for which the Native Nation Monitor(s) are not present on site. The method of communication (phone, email) will be determined through mutual agreement by the Archaeologist and Native Nation Monitor(s) prior to the start of construction.

Potential Discovery of Human Remains during Construction

- The EIC or his/her designee, in coordination with the Construction Manager and Equipment Operator, will follow procedures outlined in the *NYSDOT Procedures in the Event of the Inadvertent Discovery of Human Remains during Construction* (**Appendix 3**) and the 2002 *Haudenosaunee Protocol for Handling Discovery of Human Remains* (**Appendix 3**) if human remains or potential human remains are encountered as a result of archaeological monitoring during construction. A list of names and contact information, example found in **Appendix 7** of this Agreement, will be provided at the preconstruction meeting for this purpose.
- When notified of the discovery of human remains, the NYSDOT OOE, in coordination with FHWA, will contact the SHPO and the Onondaga Nation to initiate formal consultation. The NYSDOT OOE will also contact the SHPO and the Onondaga Nation in the event of an unanticipated discovery reported by the EIC or his/her designee in any location where there is no Archaeologist or Native Nation Monitor present as stipulated in Stipulation IV.B.

ATTACHMENT 2: PROTOCOLS FOR COMMUNICATION IN CONSTRUCTION*

Key
Blue = NYS Department of Transportation
Green = §106 process
Orange = Contractor
Yellow = Onondaga Nation
Brown = Federal Highway Administration
Purple = State Historic Preservation Office
Red = Advisory Council on Historic Preservation



**This attachment was developed to identify the protocols for communication in construction as it relates to satisfying the stipulations as set forth in the Section 106 Programmatic Agreement for the Project in areas of archaeological monitoring during construction and does not necessarily represent the chain of command or employment structure.*

APPENDIX 7:
Contacts

APPENDIX 7
CONTACTS ARCHAEOLOGICAL MONITORING DURING CONSTRUCTION

NYSDOT Project Director	
Name: _____ I-81 Viaduct Project, Project Director New York State Department of Transportation 333 East Washington Street Syracuse, NY 13202 Phone Number: _____ Email Address: _____	
NYSDOT Construction	
Name: _____ Regional Construction Engineer, Region 3 New York State Department of Transportation 333 East Washington Street Syracuse, NY 13202 Phone Number: _____ Email Address: _____	Name: _____ Engineer in Charge, I-81 Viaduct Project New York State Department of Transportation 333 East Washington Street Syracuse, NY 13202 Phone Number: _____ Email Address: _____
NYSDOT Office of Environment (OOE)	
Name: _____ Director, Office of Environment New York State Department of Transportation 50 Wolf Road Albany, NY 12232 Phone Number: _____ Email Address: _____	Name: _____ Project Cultural Resource Coordinator Office of Environment New York State Department of Transportation 50 Wolf Road Albany, NY 12232 Phone Number: _____ Email Address: _____
NYSDOT Construction Environmental Coordinator (CEC), or equivalent	
Name: _____ Construction Environmental Coordinator New York State Department of Transportation 333 East Washington Street Syracuse, NY 13202 Phone Number: _____ Email Address: _____	

Federal Highway Administration

Name: _____
District Engineer
Federal Highway Administration – NY Division
Leo W. O'Brien Federal Building
11A Clinton Avenue, Suite 719
Albany, NY 12207
Phone Number: _____
Email Address: _____

Name: _____
Area Engineer
Federal Highway Administration – NY Division
Leo W. O'Brien Federal Building
11A Clinton Avenue, Suite 719
Albany, NY 12207
Phone Number: _____
Email Address: _____

New York State Office of Parks Recreation and Historic Preservation

Name: _____
Director, Technical Preservation Services Bureau
Division for Historic Preservation
Agency Historic Preservation Officer
New York State Office of Parks Recreation & Historic Preservation
Peebles Island State Park, PO Box 189
Waterford, New York 12188-0189
Phone Number: _____
Email Address: _____

New York State Museum

Name: _____
New York State Archaeologist
Division of Research and Collections
New York State Museum
3118 Cultural Education Center
Albany, NY 12230
Phone Number: _____
Email Address: _____

Name: _____
Director, Research and Collections Division
New York State Museum
3140 Cultural Education Center
Albany, New York 12230
Phone Number: _____
Email Address: _____

Onondaga Nation	
Faithkeeper Anthony Gonyea DYODIHWASNYE'NHA Administration Building 4040 Route 11 Onondaga Nation via-Nedrow, NY 13120 Phone Number: _____ Email Address: _____	Joseph Heath General Counsel 315-475-2559 Name: _____ Phone Number: _____ Email Address: _____
Law Enforcement Agency	
Onondaga County Sheriff's Office 407 S State St, Syracuse, NY 13202 315-435-3044	City of Syracuse Police Department 511 S. State Street Syracuse, NY 13202 315-442-5111
County Coroner	
Onondaga County Medical Examiner 100 Elizabeth Blackwell Street Syracuse, New York 13210 (315) 435-3800	
Archaeological Consultant	
Name: _____ Archaeologist, I-81 Viaduct Project Firm: _____ Address: _____ _____ _____ Phone Number: _____ Email Address: _____	

APPENDIX 8:
Sample Contract

NEW YORK STATE DEPARTMENT OF TRANSPORTATION
STATE RAILROAD AGREEMENT

AGREEMENT TO REIMBURSE COSTS FOR CHANGES OF FACILITIES
AND
FOR ENTRY UPON LANDS

AGREEMENT NUMBER _____

This Agreement made this _____ by and between: **The People of The State of New York** (hereinafter called "STATE"), acting by and through the Commissioner of Transportation (hereinafter called "COMMISSIONER"), whose office is the Department of Transportation Administration and Engineering Building, 50 Wolf Road in the Town of Colonie and County of Albany and State of New York; and the (hereinafter called "RAILROAD")**.**

WHEREAS, the railroad right of way or property (hereinafter also referred to as “lands”) that is the subject of this agreement is included among the property being owned or operated by the RAILROAD.

WHEREAS, the STATE, in accordance with the Highway Law, will prepare plans and specifications for the project: **CLICK TO ENTER PIN; CLICK TO ENTER PROJECT DESCRIPTION,**

(hereinafter called "PROJECT"), and has acquired or will acquire the necessary lands and easements therefore and intends to let a contract for the work outlined therein and will supervise the work performed under such contract, and

WHEREAS, the PROJECT will be carried across the aforesaid right-of-way of the RAILROAD in accordance with the aforesaid plans and specifications which have been heretofore approved by the RAILROAD, and the STATE has requested the RAILROAD to consent to the entry upon such lands and also to perform certain work hereinafter generally described, for the accommodation of such construction primarily.

NOW, THEREFORE, in consideration of the benefits moving to each of the parties hereto, they do mutually agree as follows:

ARTICLE 1. **CONSENT TO ENTRY UPON LANDS.** The RAILROAD does hereby authorize and consent to the entry by the STATE, its representatives and contractors, upon the RAILROAD's lands and premises shown on the plans referred to above for the purpose of performing all necessary work in connection with the construction of the PROJECT by the STATE and described in said plans and specifications heretofore mentioned, which plans and specifications are hereby made a part of this Agreement by reference. This consent to enter shall be coterminous with the aforementioned highway contract.

ARTICLE 2. **CONTRACT WORK.** The STATE agrees that the construction shall be carried on with due regard to the protection and maintenance of the property, traffic and operations of the RAILROAD, and in such a manner as to cause no damage to, or unreasonable interference with such traffic or operations.

ARTICLE 3. DESCRIPTION OF WORK. The RAILROAD agrees to make necessary changes in its railroad and railroad facilities to the extent required for the construction of the PROJECT and to construct and provide such additional facilities as may be needed in connection with the maintenance and protection of railroad traffic during such changes in its railroad and the construction of said PROJECT. The RAILROAD further agrees to coordinate its said work with that of the Contractor of the STATE and to cooperate with said Contractor.

ARTICLE 4. REIMBURSEMENT. The STATE agrees to pay or to reimburse the RAILROAD for the

entire cost of any work performed, including the cost of preliminary and construction engineering as well as for facilities provided by the RAILROAD and the premiums of any and all insurance policies provided by the RAILROAD under the Agreement in connection with said construction work, pursuant to the provisions of the Federal-Aid Policy Guide, Title 23, Code of Federal Regulations (CFR) Part 140, Subpart I, (Reimbursement for Railroad Work), and amendments thereto. It is intended by the parties hereto that by this reference to said reimbursement procedure and amendments it is agreed that the provisions thereof are deemed to be included herein and are accepted as binding upon the said parties to the same extent and with the same force and effect as if such documents had been set forth in and made a part of this Agreement.

The RAILROAD shall submit to the STATE evidence of fair and reasonable costs of the aforesaid work performed or facilities provided by the RAILROAD, less the value of materials recovered, as evidence by detailed invoices acceptable to the STATE. The STATE shall reimburse the RAILROAD in the amount of the approved costs so submitted in accordance with Article Eleven-A of the State Finance Law, but in no event shall the cost to the STATE of said work performed and facilities provided and of the liability insurance policy or policies provided by the RAILROAD exceed the sum of **$_____ and _____/100 DOLLARS** specified in the estimate submitted to the STATE by the RAILROAD and made a part hereof except as such sum may hereafter be increased pursuant to an amended agreement or Agreements. All costs so submitted by the RAILROAD shall be subject to the approval of the STATE and to audit by the Comptroller of the State of New York. Reimbursement therefore by the STATE to the RAILROAD will be made for monthly periods as to the work performed or facilities provided by the RAILROAD in accordance with approved certificates showing the cost of the work so performed or facilities provided up to and including the last day of the previous month. Upon the completion of all said work by the RAILROAD pursuant to this Agreement, a final statement of costs shall be submitted to the STATE within one hundred eighty (180) days. Upon the receipt of the final statement of costs by the COMMISSIONER, the COMMISSIONER will conduct an audit of the RAILROAD's project account records within one hundred eighty (180) days to determine the resources applied or used by the RAILROAD in fulfilling the terms of this Agreement. Upon the completion of said audit and concurrence by the RAILROAD, the final reimbursement payment will be made to the RAILROAD.

On projects financed in whole or in part with Federal funds, and in recognition of the participation by the Federal Government in the costs to the STATE of this PROJECT, the RAILROAD shall keep and retain cost records and accounts so that they will be available for audit by authorized representatives of the Federal Highway Administration. The RAILROAD does further agree that on or before the date of it's final billing pursuant to this Agreement, it will notify the COMMISSIONER in writing of the location where such cost records and accounts will be available for the Government, all in accordance with Title 23, CFR Part 140, Subpart I of the U.S. Department of Transportation Federal-Aid Policy Guide and amendments thereto.

ARTICLE 4(a). AGREEMENT PAYMENTS. The RAILROAD shall provide complete and accurate billing invoices to the Agency in order to receive payment. Billing invoices submitted to the Agency must contain all information and supporting documentation required by the Agreement, the Agency and the State Comptroller. Payment for invoices submitted by the RAILROAD shall only be rendered electronically unless payment by paper check is expressly authorized by the Commissioner, in the Commissioner's sole discretion, due to extenuating circumstances. Such electronic payment shall be made in accordance with ordinary State procedures and practices. The RAILROAD shall comply with the State Comptroller's procedures to authorize electronic payments. Authorization forms are available at the State Comptroller's website at www.osc.ny.gov/epay/index/htm, by e-mail at epunit@osc.ny.gov, or by telephone at 518-474-4032. The RAILROAD acknowledges that it will not receive payment on any invoices submitted under this Contract if it does not comply with the State Comptroller's electronic payment procedures, except where the Commissioner has expressly authorized payment by paper check as set forth above.

ARTICLE 5. **FUNDS AVAILABLE.** This contract shall be deemed executory only to the extent of money available to the STATE for the performance of the terms hereof and no liability on account thereof shall be incurred by the State of New York or the RAILROAD beyond moneys available for the purpose thereof.

ARTICLE 6. **EFFECTIVE DATE OF AGREEMENT.** This Agreement shall take effect on the **CHOOSE DATE.**

ARTICLE 7. **TERMINATION OF AGREEMENT.** The STATE will obtain the RAILROAD's written acceptance of all contract work in connection with this PROJECT prior to releasing the STATE'S contractor from his contractual obligations.

The STATE reserves the right to terminate or suspend this Agreement, for any reason whatsoever. Such right of termination or suspension shall be exercised at the discretion of COMMISSIONER, by delivery of written notice thereof to the RAILROAD, and such termination or suspension shall thereupon take effect immediately.

However, nothing in this Agreement or in this Article 7 shall relieve the STATE of its obligation to reimburse the RAILROAD for costs and expenses which the RAILROAD has incurred or committed itself to under the terms or for the purposes of this Agreement prior to such termination or suspension.

Should no other action be required, this Agreement shall be considered terminated on such date as the RAILROAD receives the final reimbursement payment from the STATE for its final statement or costs submitted in accordance with Article 4 hereof.

ARTICLE 8. **DIVISION OF MAINTENANCE.** Upon the completion and acceptance by the STATE of the contract work as indicated on the plans.

The Maintenance responsibility shall remain as is currently in effect.

Before entering upon the property of the RAILROAD to perform any maintenance, the STATE shall give due notice to the Chief Engineer of the RAILROAD.

ARTICLE 9. **RESPONSIBILITY.** In addition to the protection afforded to the STATE under any available insurance, the STATE shall not be liable for any damage or injury to the RAILROAD, its agents, employees, or to any other person, or to any property, occurring on the site or in any way associated with the RAILROAD's work, activities or operations pursuant to this agreement, whether undertaken by RAILROAD's own forces or by contractors or other agents working on the RAILROAD's behalf. To the fullest extent permitted by law, the RAILROAD agrees to defend, indemnify and hold harmless the STATE, the New York State Department of Transportation, the STATE's Contractor, and their agents from and against all claims, damages, losses and expenses, including but not limited to, claims for personal injuries, property damage, wrongful death, and/or environmental claims and attorney fees arising out of any such claim, that are in any way associated with the RAILROAD's, work, activities or operations pursuant to this agreement.

ARTICLE 10. INSURANCE REQUIREMENTS. The STATE agrees that as a condition of being provided access to the PROJECT location, that insurance shall be procured, including a Railroad Protective Liability Insurance policy issued to the RAILROAD, which shall be in accordance with U.S. Department of Transportation Federal-Aid Policy Guide, and any amendments thereto with limits as shown in Title 23, CFR Section 646.107.

In addition, STATE shall require its contractor to furnish the kinds and amounts of insurance, as follows:

1. Commercial General Liability Insurance: Each and every party performing work in connection with the PROJECT described herein shall be required to be insured under a policy of insurance. Such contractor or contractors shall maintain an occurrence form commercial general liability policy or policies insuring against liability arising from personal injury or death, advertising injury, liability insured under an insured contract (including the tort liability of another assumed in a business contract) occurring on or in any way related to the premises or occasioned by reason of the operations of the primary named insured. Such coverage shall be written on an ISO occurrence form (ISO Form CG 00 01 12 07 or a policy form providing equivalent coverage), including any excess liability insurance providing coverage in an amount of five million dollars ($5,000,000.00) per occurrence and five million dollars ($5,000,000.00) aggregate. Aggregate coverage must be secured on a per-project basis. This insurance must be endorsed to provide coverage to "**the RAILROAD, the State of New York/New York State Department of Transportation, any municipality in which the event is conducted, and any governmental entity whose facilities are affected by the event, and any of their employees or agents working for or on the facility,"** using ISO form CG 20 10 07 04 or a form that provides equivalent coverage.
2. Protective Liability Insurance: In the event that work is to be performed exclusively by RAILROAD, the CGL requirement referenced, above, may take the form of Railroad Protective Liability (RRPL) insurance or self-insurance. In the event that one or more contractors are to be utilized for the PROJECT, then the primary contractor shall secure an RRPL policy in the name of RAILROAD providing coverage in an amount of two million dollars ($2,000,000.00) per occurrence and not less than six million dollars ($6,000,000.00) aggregate.
3. Workers' Compensation and Disability Insurance and Employers' Liability Insurance. As required by State Finance Law §142, any Contractor working on the PROJECT shall maintain in force workers' compensation insurance for all of Contractor's employees. Contractors shall also maintain disability insurance as required by the Disability Benefits Law of the State of New York.
4. Automobile Insurance (applicable where automobiles or other vehicles will be used in relation to the event). Contractor(s) shall maintain a commercial or other automobile policy or policies insuring against liability for bodily injury, death, or damage to property and other mandatory coverages, relating to the use, operation, loading or unloading of any automobiles (including owned, hired and non-owned vehicles) on and around the project. Coverage shall be in an amount of not less than one million dollars ($1,000,000.00), each accident.

As required by State Finance Law Section 142 and Workers' Compensation Law Section 57, RAILROAD is required shall furnish proof that there is Workers' Compensation and Disability Insurance and Employers' Liability Insurance in force for all of RAILROAD's employees. RAILROAD shall also maintain disability insurance as required by the Disability Benefits Law of the State of New York. RAILROAD shall provide evidence of the required coverage or exemption where appropriate (usually Form C-105.2 and Form DB-120.1). RAILROAD may furnish proof of coverage under the Federal Employers Liability Act and similar statutes for the protection of employers for injuries to or death of employees engaged in the work.

ARTICLE 11. **ASSIGNMENT OF AGREEMENT.** The RAILROAD agrees not to assign, transfer, convey, sublet or otherwise dispose of this Agreement or any part thereof, or of its right, title or interest therein or its power to execute such Agreement, to any person, RAILROAD or corporation without the previous consent in writing of the COMMISSIONER, unless a transfer of its entire property and assets is made. In case the RAILROAD shall, with the consent of the STATE, make contracts for any part of the work or facilities covered by this Agreement, the terms of said contracts shall be subject to the approval of the STATE. The RAILROAD shall pay its contractors in accordance with the terms of such contracts and the STATE agrees to reimburse the RAILROAD for the cost thereof.

ARTICLE 12. STARTING OF WORK. The RAILROAD agrees to start the work covered by this Agreement only after the COMMISSIONER or his authorized representative has notified the Chief Engineer of the RAILROAD in writing that it may proceed.

ARTICLE 13. REQUIRED STATE AND FEDERAL CONTRACT CLAUSES. During the performance of this contract, the RAILROAD agrees to comply with all applicable Federal and State required contract provisions which appear as **Appendix A (Standard Clauses for New York State Contracts), A-1 (Supplemental Title VI Provisions from Civil Rights Act), Appendix B (Required Contract Provisions for federal-Aid Construction Contracts)** respectively and are hereby made a part of this Agreement.

With respect to Appendix A, the STATE and the RAILROAD understand and agree that the hours of labor of the RAILROAD's employees are governed exclusively by the Federal Hours of Service Act, 35 Stat. 1415 (1907), as amended, and that the prevailing rate of wages for the RAILROAD's employees shall be that rate determined by the RAILROAD. The RAILROAD and the STATE further understand and agree that if the RAILROAD subcontracts with a third party not engaged in interstate commerce to perform an obligation of this Agreement, the above-mentioned sections will apply to the subcontractor. These understandings are essential to this Agreement, and any subsequent legislation, judicial or administrative decisions, or opinions of the State Attorney General inconsistent with these understandings, shall relieve both parties of their obligations, hereunder until a mutually acceptable substitute understanding is reached. In the event that no mutually acceptable substitute understanding is reached, then either party may terminate the Agreement.

To the extent that this agreement calls for RAILROAD to provide materials, as provided in Appendices, RAILROAD will provide materials from existing inventories. The STATE and RAILROAD understand and agree that to the extent RAILROAD is required to procure additional materials for completion of the PROJECT, RAILROAD will do so in accordance with the Appendices.

ARTICLE 14. NOTICES. All notices permitted or required hereunder shall be in writing and shall be transmitted either:

(a) via certified or registered United States mail, return receipt requested;
(b) by facsimile transmission;
(c) by personal delivery;
(d) by expedited delivery service; or
(e) by e-mail.

1. Such notices shall be addressed as follows or to such different addresses as the parties may from time-to-time designate:

2. Any such notice shall be deemed to have been given either at the time of personal delivery or, in the case of expedited delivery service or certified or registered United States mail, as of the date of first attempted delivery at the address and in the manner provided herein, or in the case of facsimile transmission or email, upon receipt.

3. The parties may, from time to time, specify any new or different address in the United States as their address for purpose of receiving notice under this Agreement by giving fifteen (15) days written notice to the other party sent in accordance herewith. The parties agree to mutually designate individuals as their respective representatives for the purposes of receiving notices under this Agreement. Additional

individuals may be designated in writing by the parties for purposes of implementation and administration/billing, resolving issues and problems and/or for dispute resolution.

IN WITNESS WHEREOF, the STATE has caused this Agreement to be signed by the Commissioner of Transportation, and the RAILROAD has caused these presents to be signed by its duly authorized officer on the day and year first above written:

If any clause, sentence, subdivision, paragraph, section or part of the contract be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair or invalidate the remainder thereof, but shall be confined in its operation to the clause, sentence, subdivision, paragraph, section or part thereof directly involved in the controversy in which such judgment shall have been rendered.

This Agreement is based on the RAILROAD's force account estimate dated _____

in the amount of _____and_____/100

DOLLARS ($_____) and is valid through CHOOSE DATE.

CLICK TO ENTER PIN

AGREEMENT NUMBER _____

NYSDOT Certification

"In addition to the acceptance of this contract, I also certify that original copies of this signature page will be attached to all other exact copies of this contract."

THE PEOPLE OF THE STATE OF NEW YORK (L.S.)

By: _____ _____

for: Commissioner of Transportation Date

By: _____

Title:_____

The following acknowledgment to be completed by the RAILROAD

STATE OF _____)

) SS:

COUNTY OF_____)

On this _____ day of _____, 20____, before me personally came

_____ to me known to be the

_____ of _____

the corporation described in and which executed the foregoing instrument: acknowledged to me that (s)he executed the same pursuant to authorization by the Board of Directors of said corporation.

_____

NOTARY PUBLIC

APPROVED AS TO FORM
NEW YORK STATE
ATTORNEY GENERAL'S SIGNATURE

_____

Dated_____

Not Applicable to agreements in amounts of $50,000.00 or less

NEW YORK STATE
COMPTROLLER'S SIGNATURE

_____

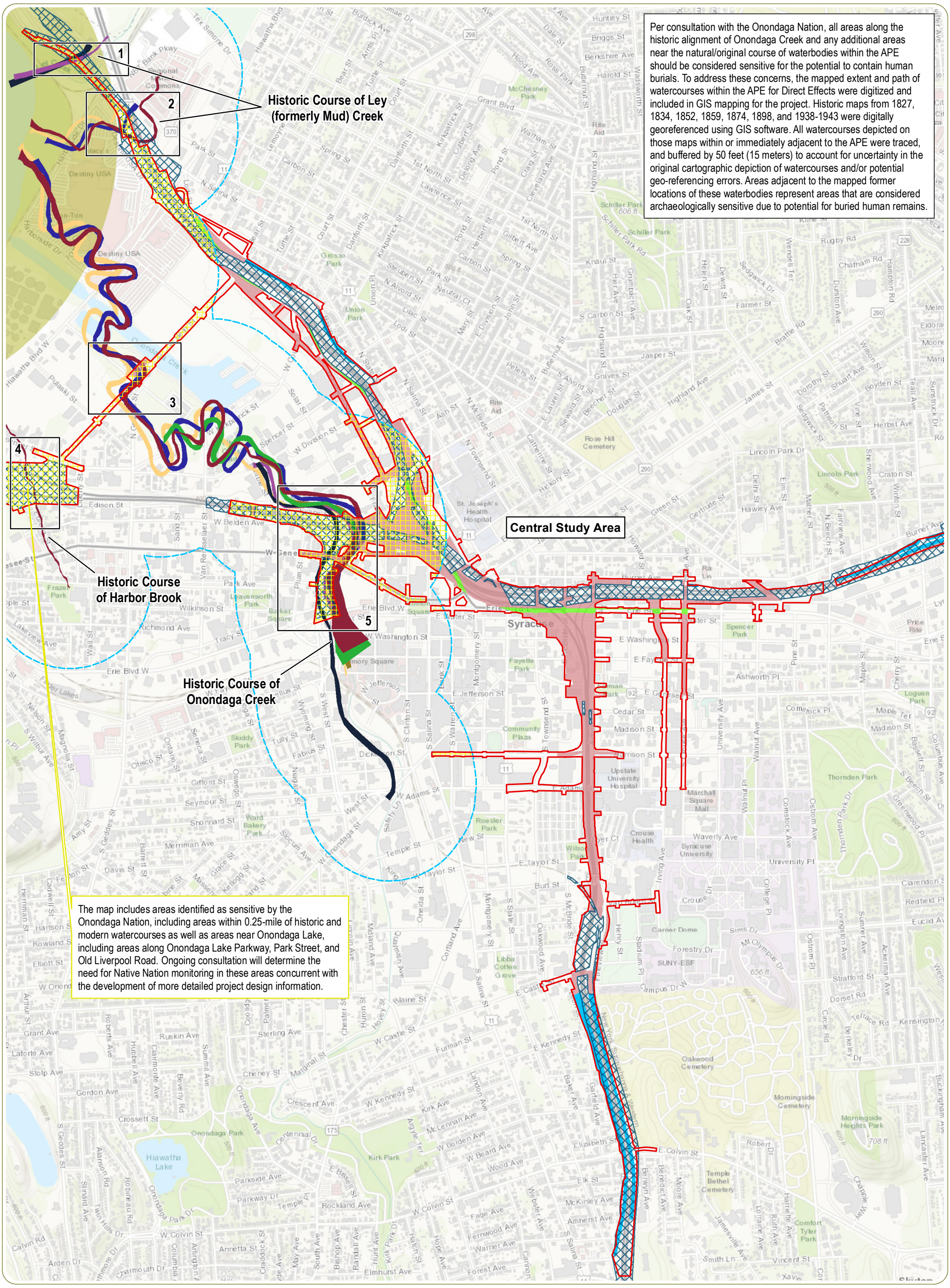
Dated_____

Not Applicable to agreements in amounts of $50,000.00 or less

Eff. April 10, 2006, per NY Finance L. Section 112(2)(a), the “T” contract limit was raised from $15,000.00 to $50,000.00 or less {Ref: Comptroller’s Bulletin #G - 225, d. 4/26/06}

APPENDIX 9:

Areas of Potential Native Nation Monitoring (Map 1, Sheets 1 and 2)
Focus Map - Areas of Potential Native Nation Monitoring (Map 2, Sheets 1 and 2)
Typical Road Section and Associated Definitions



I-81 Viaduct Project

Onondaga County, New York

Map 1: Areas of Potential Native Nation Monitoring

Sheet 1: Central Study Area

January 2022

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.
3. This map presents information originally presented in Figure 4 of the Phase IB Work Plan (EDR, 2017).

- APE for Direct Effects
- Cut and Fill Highway and Embankment Areas
- Shovel Testing Completed 2017-2020

Recommendations

- Machine-Aided Testing and/or Monitoring
- Archaeological Monitoring

Historic Locations of Streams

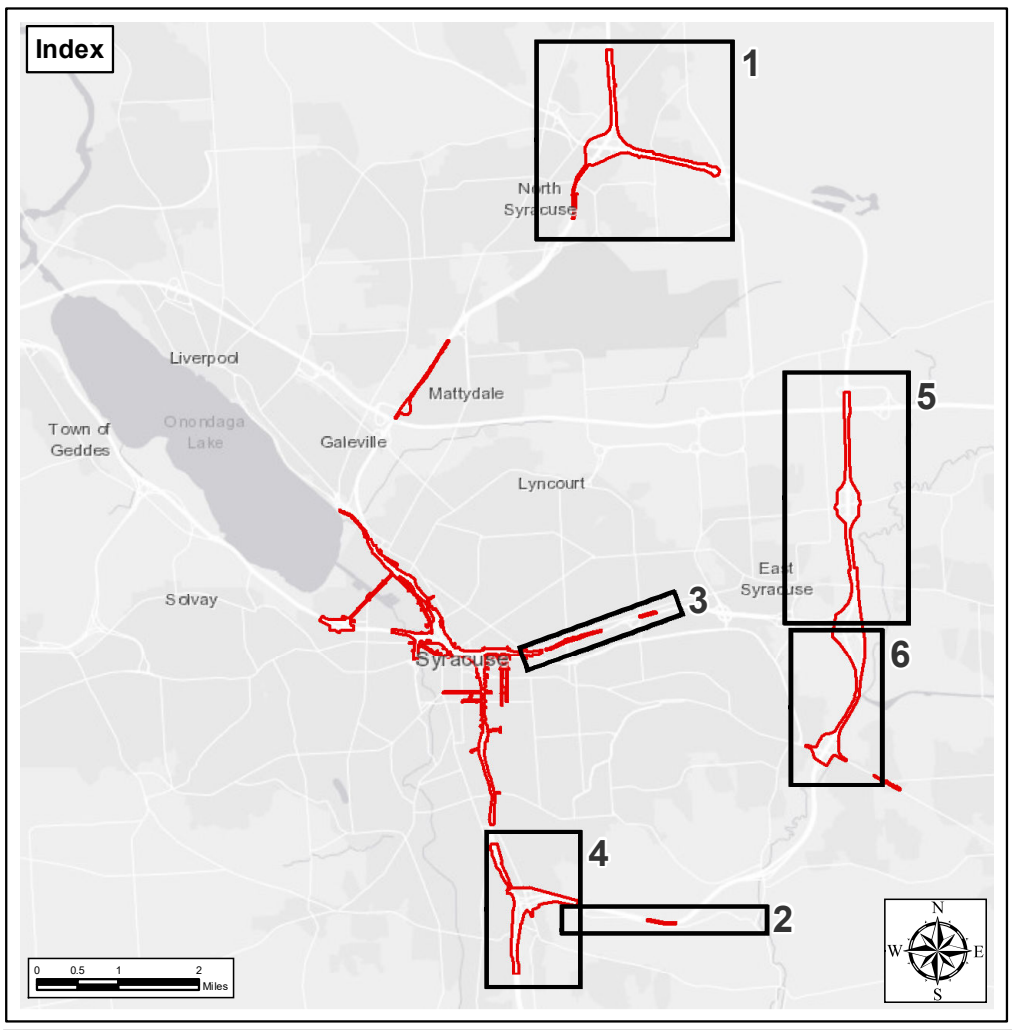
- 1827 Kellogg Map of a Part of the Onondaga Salt Springs Reservation
- 1834 Leavenworth & Clarke Map of the Village of Syracuse and the Village of Lodi
- 1852 Fagan Map of Onondaga County, New York
- 1859 French Map of Onondaga County, New York
- 1874 Sweet New Atlas of Onondaga Co., New York
- 1898 USGS Topographic Quadrangle
- 1938-1943 USGS Topographic Quadrangles
- Quarter-Mile Buffer of Watercourses
- Sensitive Area Identified by Onondaga Nation
- Potential Native Nation Monitoring

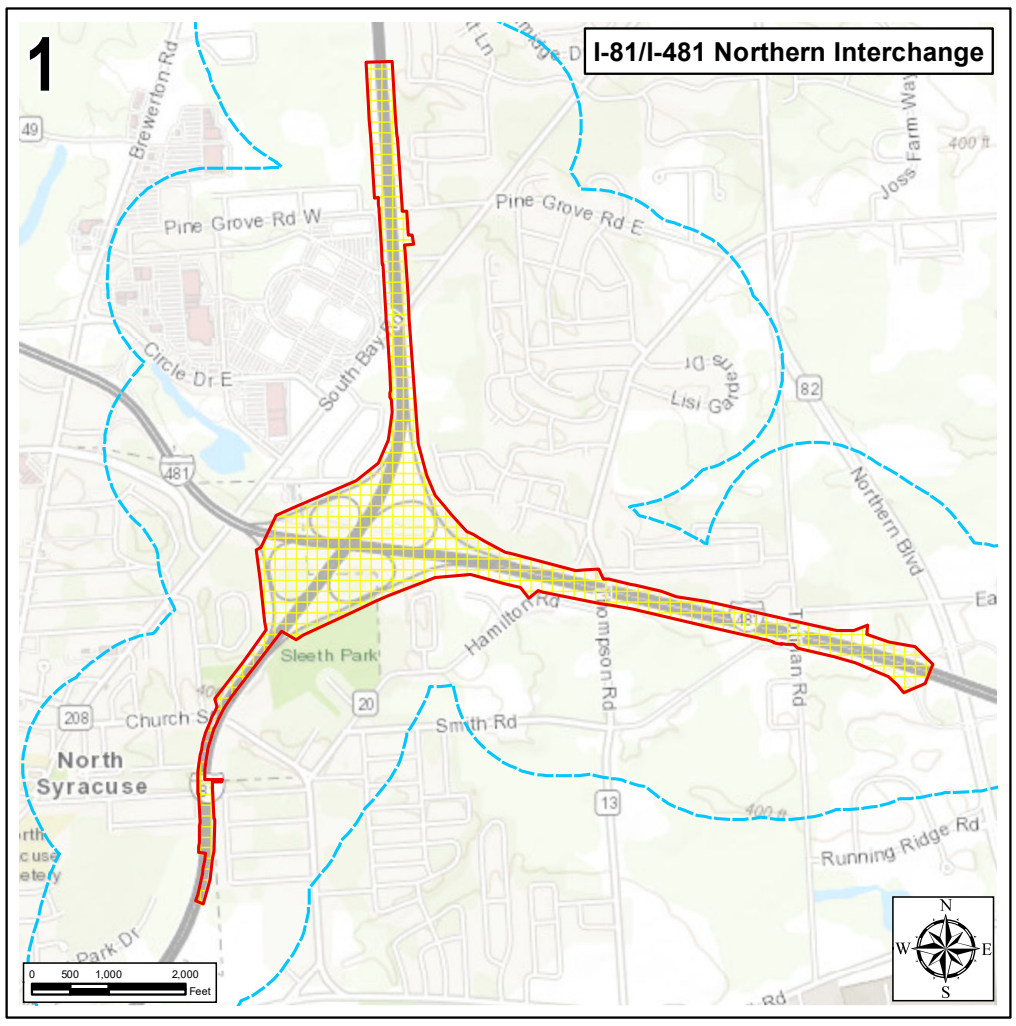
0 500 1,000 2,000 Feet

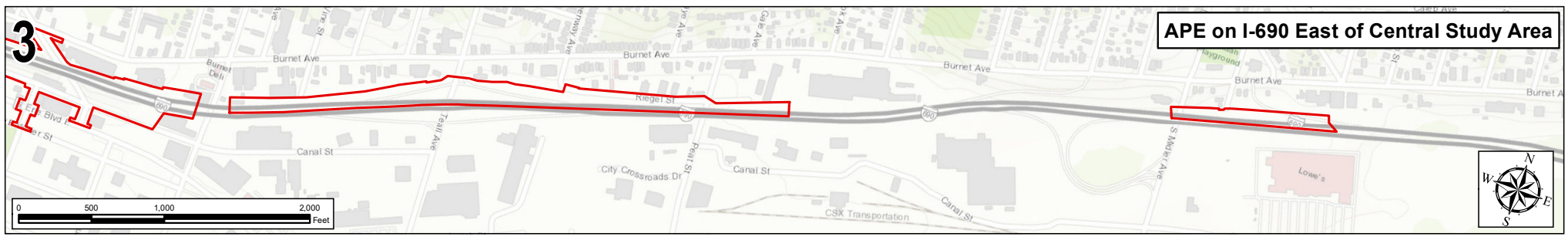
N W E S

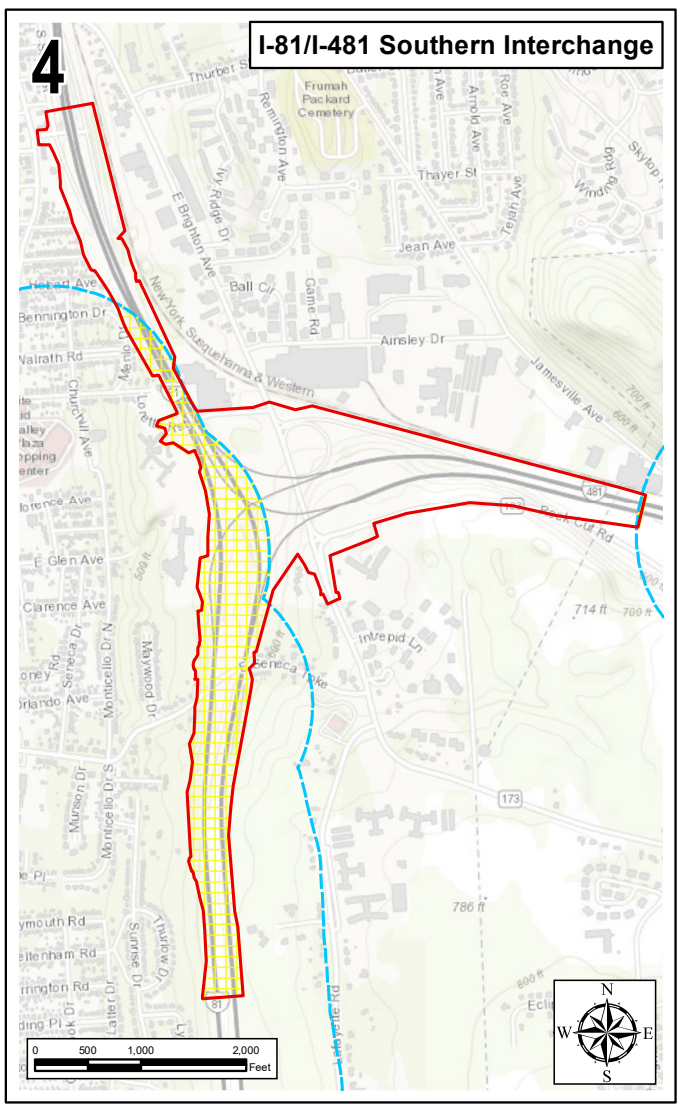
NEW YORK STATE OF OPPORTUNITY. Department of Transportation

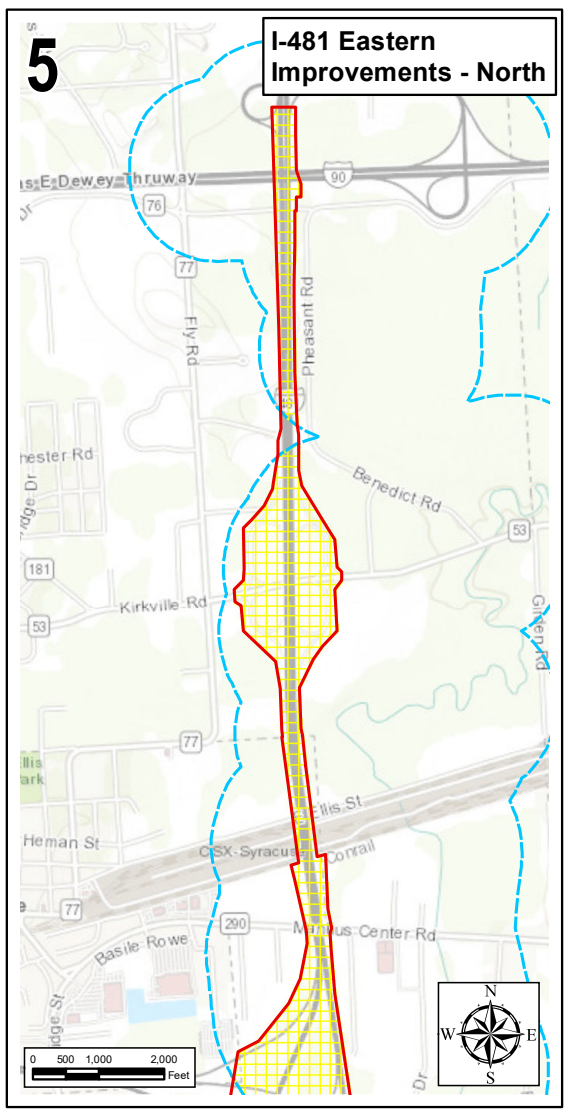
U.S.Department of Transportation
Federal Highway Administration

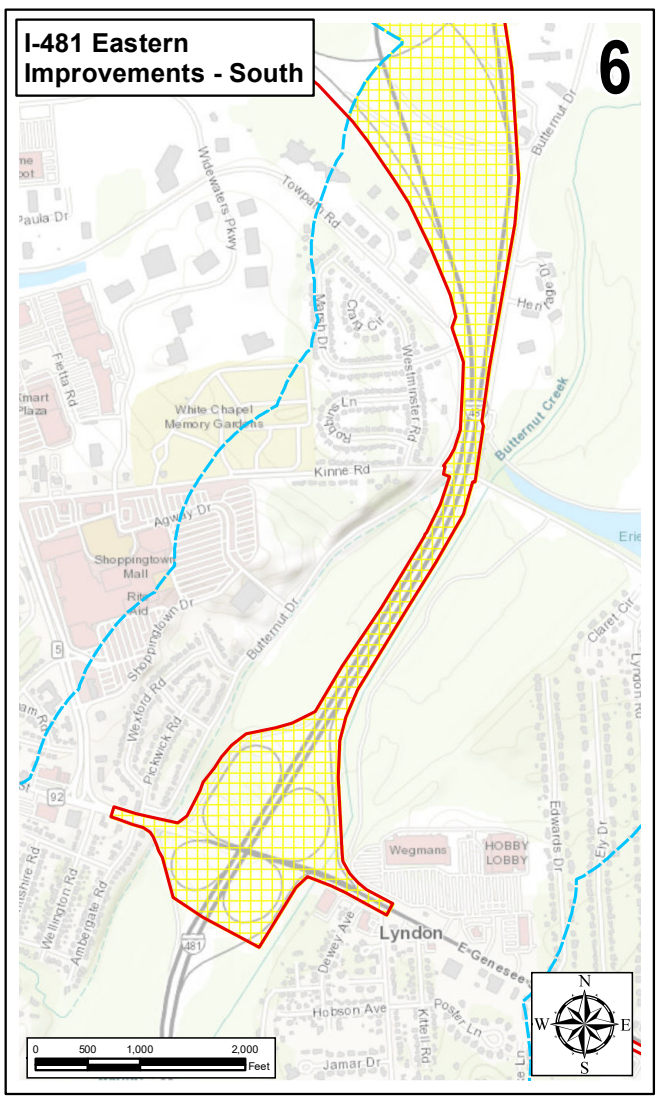












I-81 Viaduct Project

Onondaga County, New York

Map 2: Focus Map - Areas of Potential Native Nation Monitoring

Sheet 2: Additional Areas

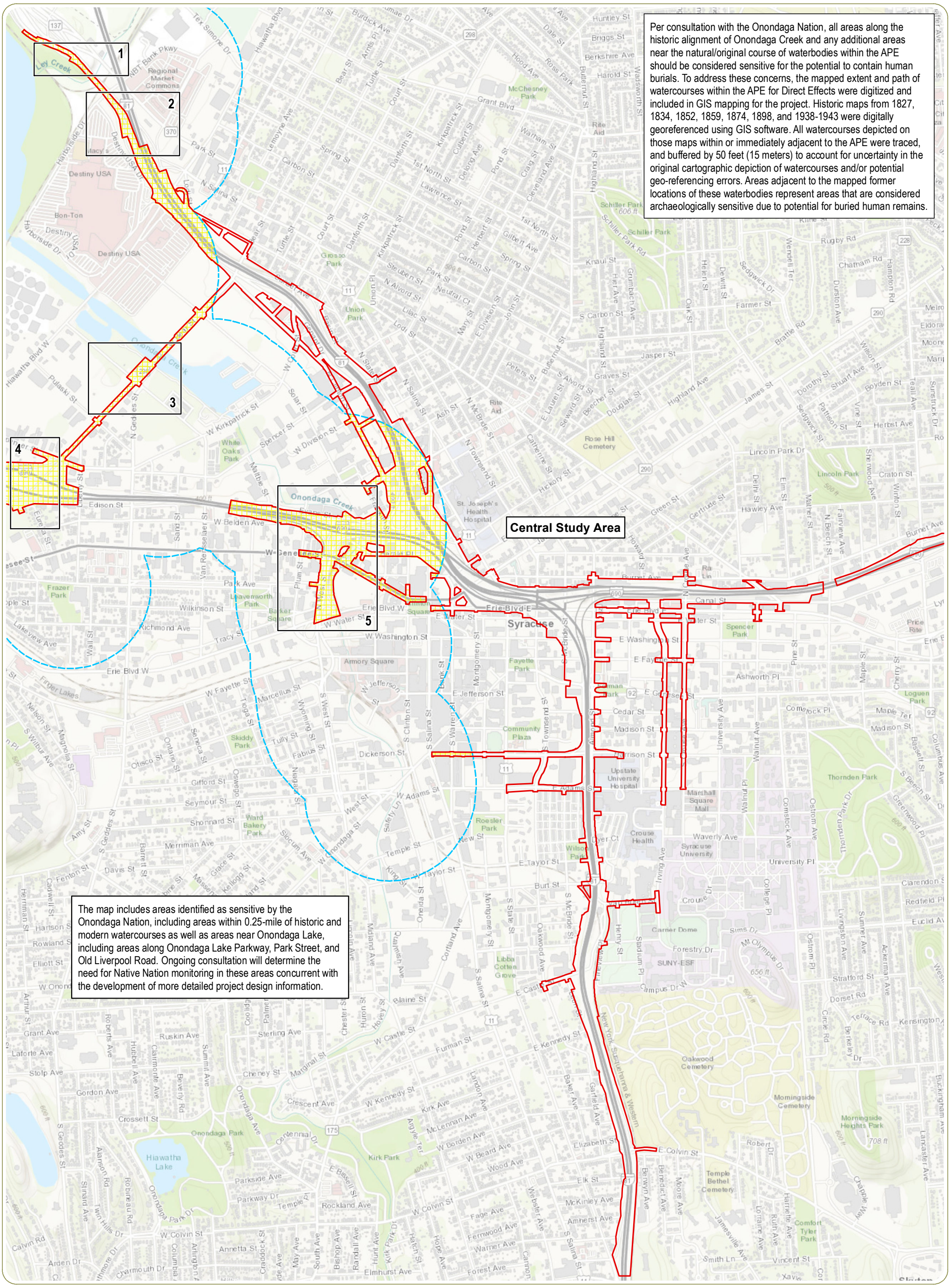
Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.
3. This map presents information originally presented in Figure 4 of the Phase IB Work Plan (EDR, 2017).

APE for Direct Effects
Quarter-Mile Buffer of Watercourses
Potential Native Nation Monitoring

February 2022

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

U.S.Department of Transportation
Federal Highway Administration



I-81 Viaduct Project

Onondaga County, New York

Map 2: Focus Map - Areas of Potential Native Nation Monitoring

Sheet 1: Central Study Area

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- APE for Direct Effects
- Quarter-Mile Buffer of Watercourses
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0 500 1,000 2,000 Feet

N W E S

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

U.S.Department of Transportation
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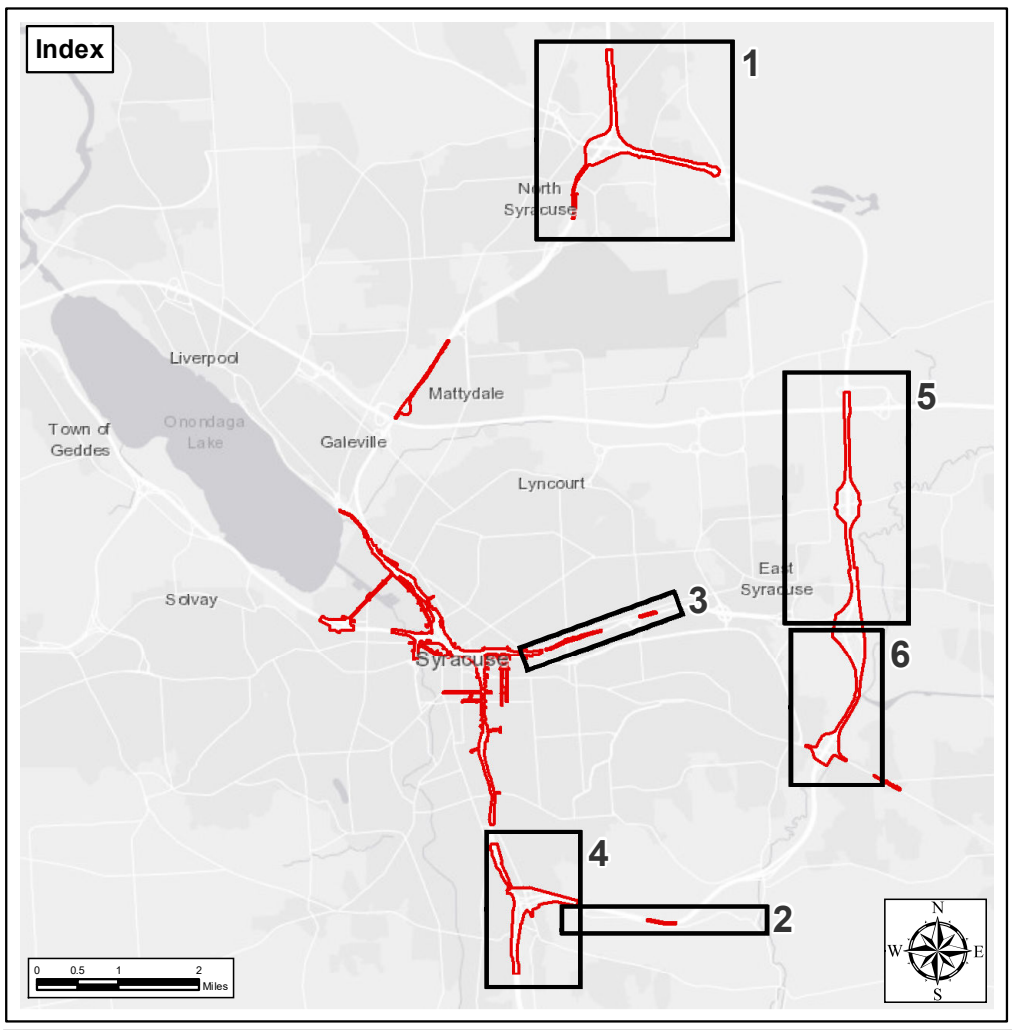
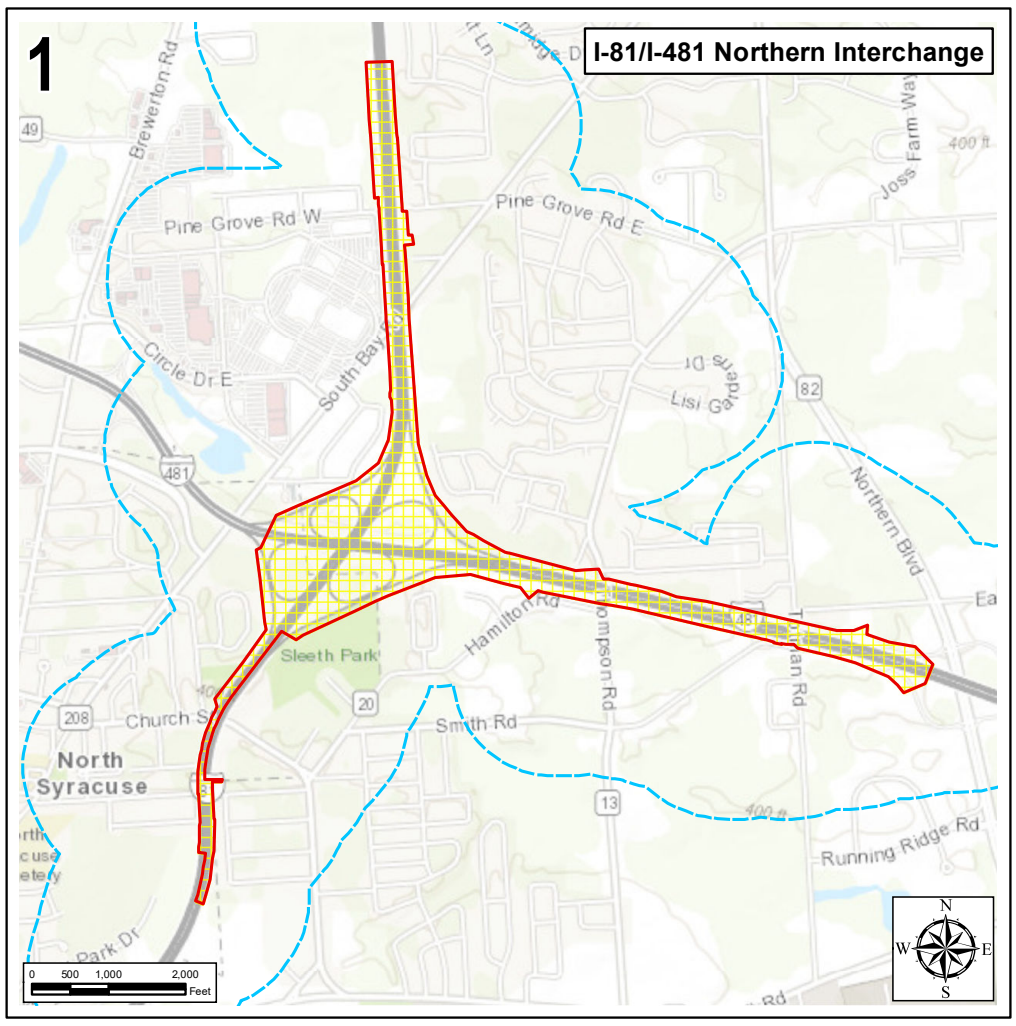
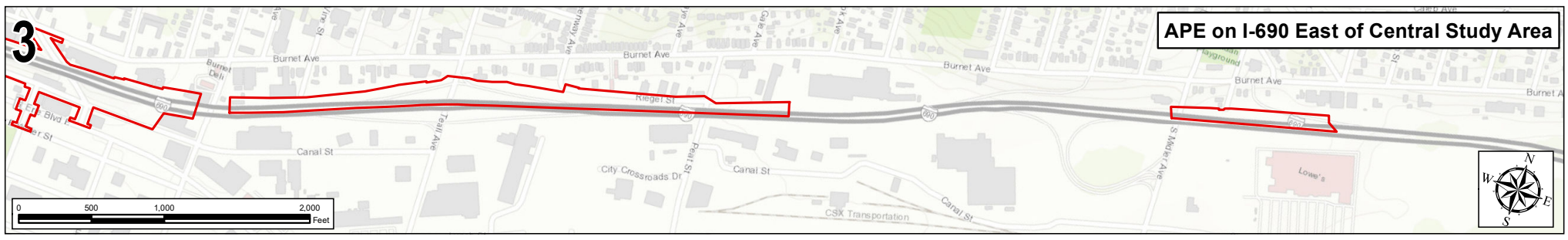
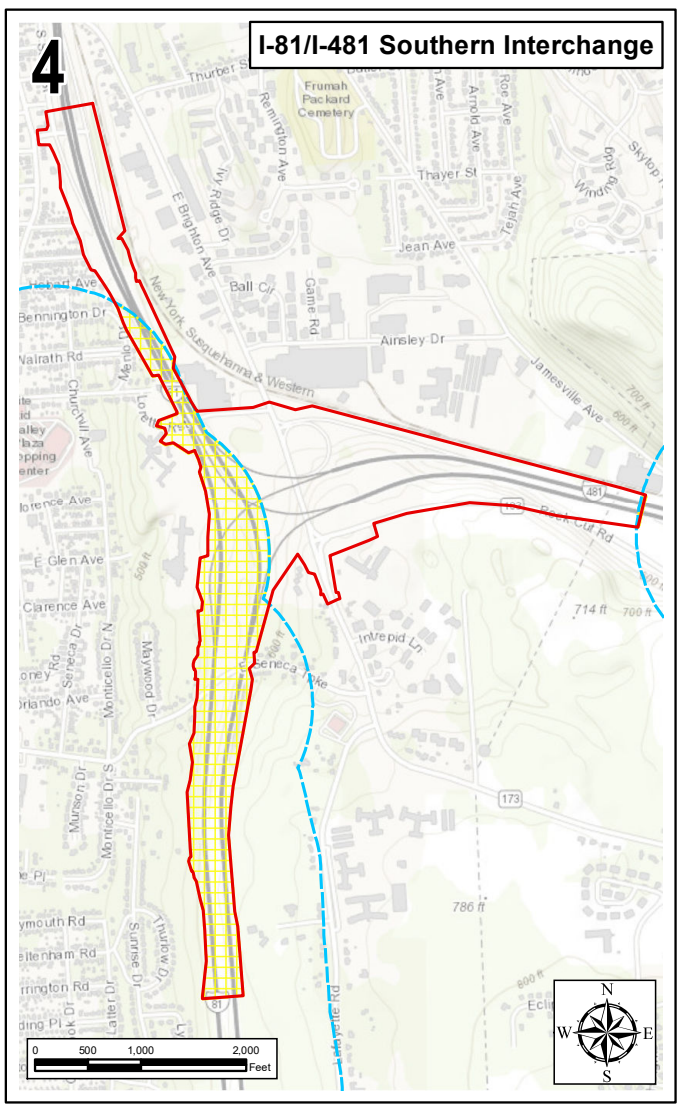
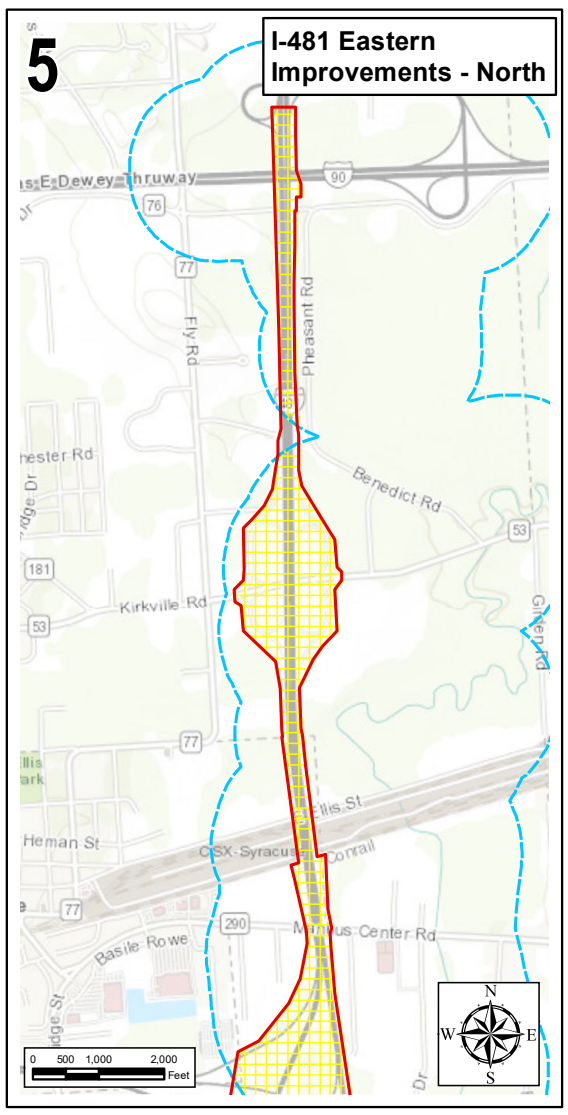
February 2022

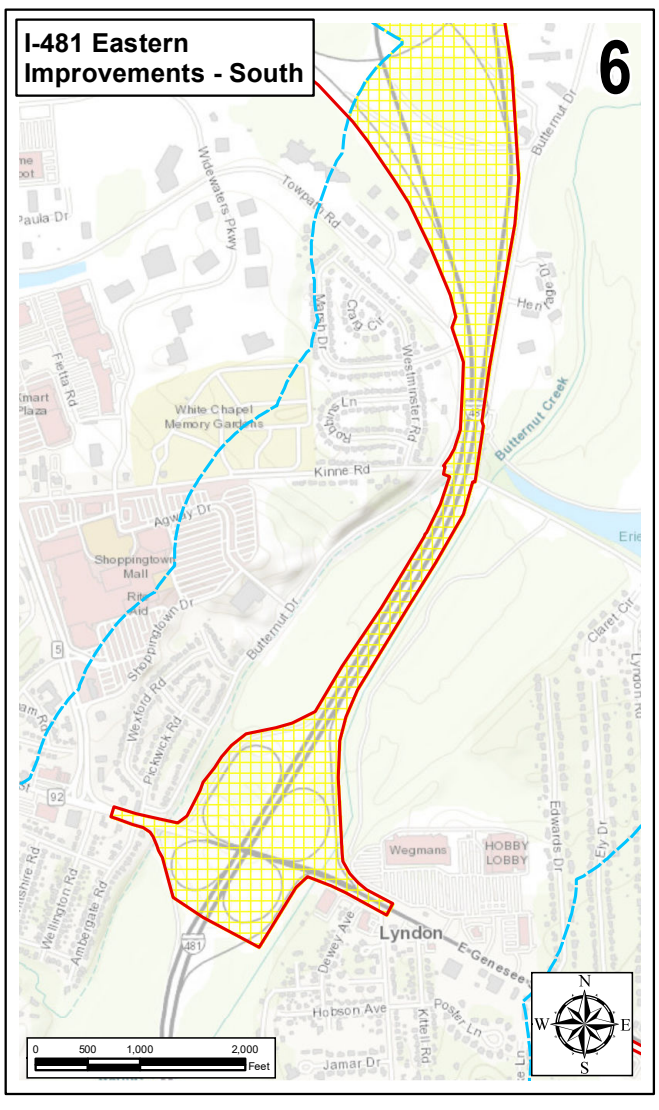












I-81 Viaduct Project

Onondaga County, New York

Map 2: Focus Map - Areas of Potential Native Nation Monitoring

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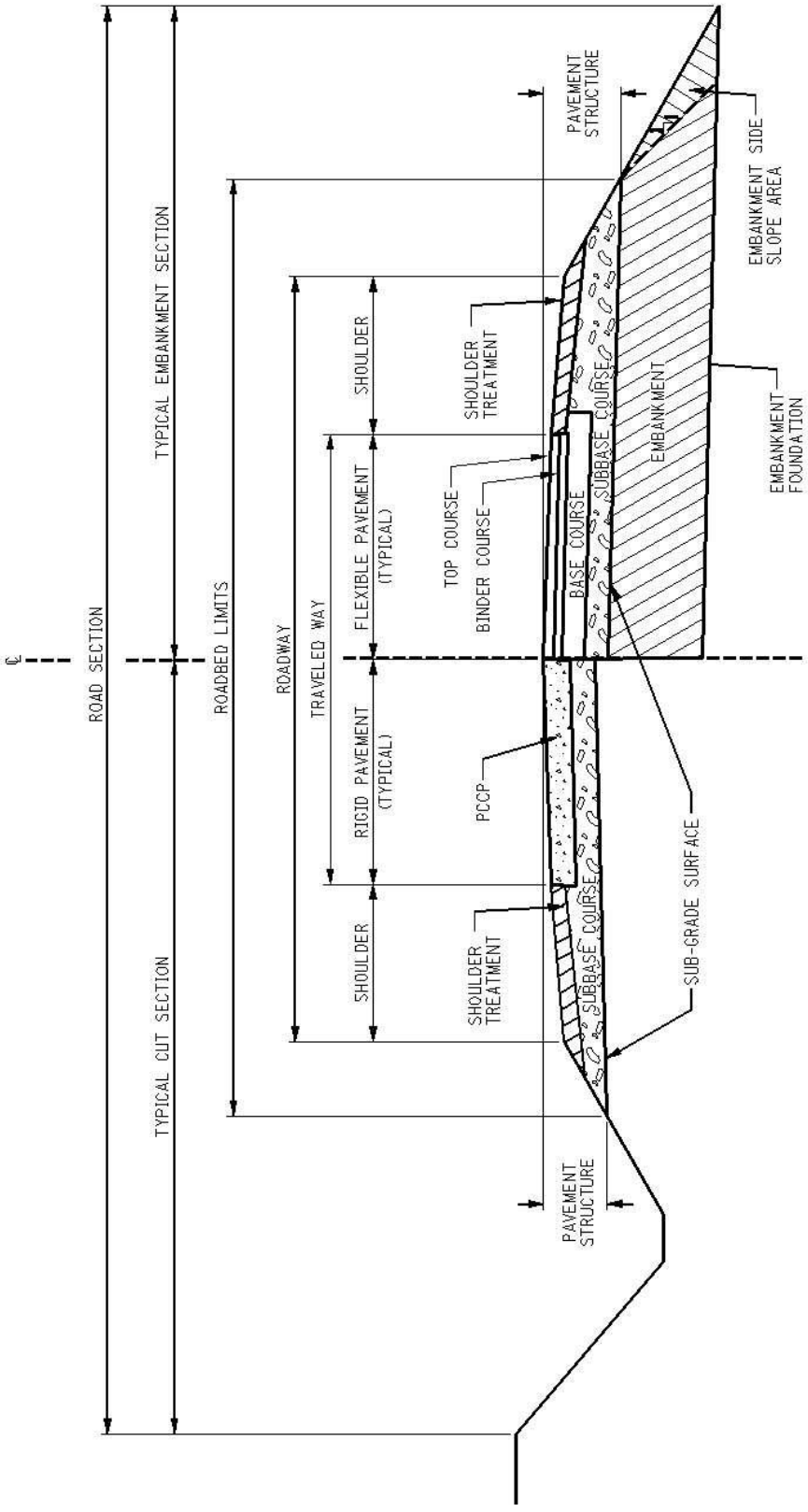
APE for Direct Effects
Quarter-Mile Buffer of Watercourses
Potential Native Nation Monitoring

February 2022

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

U.S.Department of Transportation
Federal Highway Administration

APPENDIX 9
TYPICAL ROAD SECTION AND ASSOCIATED DEFINITIONS



AS DEFINED IN THE NYSDOT STANDARD SPECIFICATIONS, SECTION 101-02 DEFINITIONS OF TERMS:

Fill is the material used under the highway to raise the elevation of the roadway.

Foundation Course refers to the subbase and subgrade materials that support the asphalt or concrete surface layers.

Inlay refers to placing an asphalt paving course on top of a milled surface area, which fills holes and levels the pavement.

Material means any approved material acceptable to the Commissioner and conforming to the requirements of the specifications.

Pavement Structure is the combination of subbase, base course and surface course(s) placed on a subgrade to support the traffic load and distribute it to the roadbed.

Plans are the official contract drawings and applicable standard sheets, which show the location, character, dimensions and details of the work to performed.

Road Section is that portion of a highway included between the top of the slope in cut and the bottom of slope in fill.

Roadbed means the graded portions of a highway within top and side slopes, prepared as a foundation for the pavement structure and shoulders.

Shoulder means the portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of base and surface courses.

Structures include bridges, culverts, retaining walls, cribbing, manholes, drainage structures, end walls, buildings, sewers, service pipes, underdrains, foundation drains and other features which may be encountered in the work and not otherwise classed herein.

Subbase is the layer or layers of specified or selected material of designed thickness placed on a subgrade to support a base course.

Subgrade means the existing material to remain, or embankment material which is below the pavement structure.

Tolerance Zone, when used in reference to an underground utility, shall be a distance of 2 feet on either side of the designated centerline, plus one-half of the utility diameter, if the utility diameter is known.

SP-13. LOCAL HIRING INITIATIVE

Intentionally left blank. Details to be included in the Final RFP.

SP-14. TRAINING REQUIREMENTS

Intentionally left blank. Details to be included in the Final RFP.